Dear User of Inspur Yingxin Server,

Heartfelt thanks for your use of Inspur Yingxin Server!

This manual introduces the technical characteristics, the system installation and setup of the server to help you to fully understand and expediently use this server.

Please deliver the package of our product to the waste recycling station for recycling, in favor of pollution prevention and humankind's benefit.

This manual is the property of the Inspur Group Co., Ltd.

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Please contact Inspur Group Co., Ltd. if you have any questions or advice about this manual.

Inspur Group Co., Ltd.
August, 2012

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Statement

Please read the following statement before you use this server formally. Only when you have read this statement hereinafter and agreed the following terms, you can formally use this server. If you have any questions about the following terms, please contact our supplier or us directly. If you have no questions about these terms and start to use this server, it acquiesces that you have agreed the following terms.

1. We must call your attention that you must not alter any other parameters in the main board BIOS of this server at any time, except for the parameters which we promote that you can alter.

2. If there are any hardware problems when you use this server, or you wish to upgrade the hardware, please feed back the detail hardware configuration of your computer to our Customer Service. Don't disassemble the server chassis or any hardware components in the chassis by yourself.

3. In this server, the MEMORY, CPU, CPU Heat Sink and Fan are in given standard. Please don't use them with the corresponding components of any other computers confusedly.

4. When you have any software problems during the application of this server, we hope that you firstly contact the corresponding software supplier and then he will contact us in favor of communication so as to solve your problem together, especially the software problems about the database, the installation and running of the network management software or other networking product.

5. The pictures in the attached printings are just for reference; please refer to the real machine you purchased.

6. If you want to install this server, please first read carefully the attached quick manual. If you have any problem with usage, please contact our customer service center.

7. We must call your attention that in the application process you should pay attention to doing necessary backup of your file.

8. This is a class A product. In living environment this product may cause radio interference in which case the user may be required to take adequate measures.

9. The copyrights of the markers and names of the software and hardware product referred in this manual are the property of corresponding companies.

10. In the above statement, "us" indicates the Inspur Group Co., Ltd.; Inspur Group Co., Ltd. reserves the right of final explanation about the above statement.

Regarding the Manual

- **Chapter One Safety Information**

  In this chapter, safety information regarding server usage is introduced.

- **Chapter Two Product Introduction**

  In this chapter, the technical characteristics, appearance characteristics and I/O interface technical specification of this server are introduced.

- **Chapter Three System Setup**

  In this chapter, the setup of the motherboard BIOS of this server and the usage of some motherboard common jumper is introduced.

- **Chapter Four SATA RAID Setup**

  In this chapter, how to set up the RAID of the onboard SATA controller is introduced

- **Chapter Five SAS RAID Setup**

  In this chapter, how to set up the RAID of the onboard SAS controller is introduced.

- **Chapter Six Operating System Installation**

  In this chapter, how to install the mainstream operating system to this server is introduced.

- **Chapter Seven Common Problem and Troubleshooting**

  In this chapter, solutions of some common problems are introduced.

- **Chapter Eight Instruction of Integrated Management Card Management Function**

  In this chapter, how to use the integrated management card is introduced

- **Chapter Nine Sever Installation Guide**

  In this chapter, how to install server with rack-mounted configuration to the cabinet by slide rail is introduced.

We suggest you read this manual carefully before you use this server in case of the unnecessary faults in your operation.

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Chapter One Safety Information

Warning: the following warnings show that there are potential dangers that may cause property loss, personal injury or death:

Warning 1: The power supply equipment in the system may generate high voltage and dangerous electrical energy and thus cause personal injury. Please do not dismount the cover of the host or to dismount and replace any component in the system by yourself, unless otherwise informed by Inspur; only maintenance technicians trained by Inspur have the right to disassemble the cover of the host, dismount and replace the internal components.

Warning 2: Please connect the equipment to appropriate power supply, and the power should be supplied by external power supply which is indicated on the rated input label. To prevent your equipment from damages caused by momentary spike or plunge of the voltage, please use relevant voltage stabilizing equipment or uninterruptible power supply equipment.

Warning 3: If extended cables are needed, please use the three-core cables matched with correct earthed plug, and check the ratings of the extended cables to make sure that the sum of rated current of all products inserted into the extended cables do not exceed 80% of the limits of the rated currents of the extended cables.

Warning 4: Please be sure to use the supplied power supply component, such as power lines, power socket (if supplied with the equipment) etc.. For the safety of equipment and the user, do not replace randomly power cables or plugs.

Warning 5: To prevent electric shock dangers caused by leakage in the system, please make sure that the power cables of the system and peripheral equipment are correctly connected to the earthed power socket. Please connect the three-core power line plug to the three-core AC power socket that is well earthed and easy to access, be sure to use the earthing pin of power lines and do not use the patch plug or the earthing pin unplugged with cables. In case of the earthing conductors not installed and it is uncertain whether there are appropriate earthing protections, please do not operate or use the equipment. Contact and consult with the electrician, please.

Warning 6: To avoid short circuit of internal components and fire or electric

shock hazards, please do not fill any object into the open pores of the system.

Warning 7: Please place the system far away from the cooling plate and at the place with heat sources, and be sure not to block the air vents.

Warning 8: Be sure not to scatter food or liquid in the system or on other components, and do not use the product in humid and dusty environment.

Warning 9: The replacement of batteries with those of another model may cause explosion. When replacement of batteries is required, please consult first the manufacturer and choose batteries of the same or a similar model recommended by the manufacturer. Do not dismount, extrude and pink the batteries or make the external connection point short circuit, and do not expose them in the environment over 60°C. Never throw them into fire or water. Please do not try to open or repair the batteries, and be sure to reasonably deal with the flat batteries and do not put the flat batteries, the circuit boards that may include the batteries and other components with other wastes. For relevant battery recovery, please contact the local waste recovery and treatment mechanism.

If what you bought is the chassis, besides carefully read the installation description attached with the cabinet products and get known about the special warning notices and installation process, you must abide by the following preventive measures to guarantee the cabinet to be stable and safe:

Warning 10: Before installing equipment in the chassis, please install front and side supporting feet on the independent chassis; for cabinet connecting with other chassis, it shall install the front supporting foot first. If you fail to install correspondingly the supporting foot before installing equipment in the chassis, it may cause the cabinet to turn over in some cases, and thus may cause personal injury. Therefore, it is necessary to install supporting feet before installing equipment in the chassis. After installing the equipment and other components in the chassis, it can only pull out one component from the cabinet through its sliding component at one time. Pulling out several components at the same time may lead the cabinet to turn over and cause serious personal injury.

Warning 11: Please do not move the chassis. Considering the height and weight of the chassis, at least two people are needed to complete its movement.

Warning 12: Declaration

The product is Grade A product, and in the living environment, it may cause radio interference. In such case, it may need the user to take feasible measures for

the interference.

Notes: in order to help you use the equipment, the following considerations can help avoid the occurrence of problems that may damage the components or cause data loss:

1. In case of the following cases, please unplug the power line plug of products from the power socket and contact the customer service department of Inspur:

- The power cables, extended cables or power plugs are damaged.
- The products get wet by water.
- The products have fallen off or been damaged.
- Objects fall into the products.
- When operating according to the operation instructions, the products cannot function normally.

2. If the system becomes damp, please treat it according to the following steps:

- Switch off the power supplies of the system and the equipment, disconnect them with the power socket, wait for 10 to 20 minutes, and then open the cover of the host.
- Move the equipment to the ventilation place to dry the system at least for 24 hours and make sure that the system is fully dried.
- Close the cover of the host, re-connect the system to the power socket, and then start the equipment.
- In case of operation failure or abnormal situation, please contact Inspur and get technical support.

3. Pay attention to the position of the system cables and power cables, wire them in places not to be stepped on or knocked down and ensure not to place other objectives on the cables.

4. Before dismounting the cover of host or contacting the internal components, you shall cool down the equipment first; to avoid damaging the main-board, please power off the system and wait for 5 seconds, and then dismount the components from the main-board or disconnect the connection of peripheral equipment of the system.

5. If there are modulator-demodulator, telecommunication or local area network options in the equipment, please pay attention to the following matters:

- In case of thunder and lightning weather, please do not connect or use the modulator-demodulator. Otherwise, it may be subject to lightning strike.
- Never connect or use modulator-demodulator in moist environment.
- Never insert the modulator-demodulator or telephone cables to the socket of net-

work interface controller (NIC).

- Before unpacking the product package, contacting or installing internal components or contacting un-insulated cables or jacks of the modulator-demodulator, please disconnect the modulator-demodulator cables.

6. In order to prevent the electrostatic discharge from damaging the electronic components in the equipment, please pay attention to the following matters:

- You shall conduct off the static electricity on the body before dismounting or contacting any electronic component in the equipment. You can conduct off the static electricity on the body by contacting the metal earthing objects (such as the unpainted metal surface on the chassis) to prevent the static electricity on the body from conducting itself to the sensitive components.

- For electrostatic sensitive components not ready to be installed for application, please do not take them out from the antistatic package materials.

- During the work, please touch the earthing conductor or the unpainted metal surface on the cabinet regularly to conduct off the static electricity on the body that may damage the internal components.

7. When dismounting the internal components with the approval of Inspur, please pay attention to the following matters:

- Switch off the system power supply and disconnect the cables, including disconnecting any connection of the system. When disconnecting the cables, please grab the connector of cables and plug it out, and never pull the cables.

- Before dismounting the cover of cabinet or touching the internal components, the products need to be cooled down.

- Before dismounting and touching any electronic component in the equipment, you shall conduct off the static electricity on the body by touching the metal earthing objectives.

- During the dismounting process, the operation shall not be too big, so as to prevent damage to the components or scratching of the arms.

- Carefully deal with the components and plug-in cards, and please never touch the components or connection points on the plug-in cards. When taking the plug-in cards or components, you should grab the edges of the plug-in cards or components or their metal fixed supports.

8. During the process of cabinet installation and application, please pay attention to the following matters:

- After the installation of cabinet is finished, please ensure that the supporting feet have been fixed to the rack and supported to the ground, and all weight of the rack have been fell onto the ground.

- It shall install into the cabinet according to the sequences from the bottom to the top, and first install the heaviest component.

- When pulling out the components from the cabinet, it shall apply force slightly to ensure the cabinet to keep balance and stabilization.

- When pressing down the release latch of the sliding rail of components and sliding in or out, please be careful, as the sliding rail may hurt your figures.

- Never make the AC power branch circuit in the cabinet overload. The sum of cabinet load shall not exceed 80% of the ratings of branch circuits.

- Ensure that components in the cabinet have good ventilation.

- When repairing components in the cabinet, never step on any other components.

Chapter Two Product Introduction

2.1 Server Technical Specification

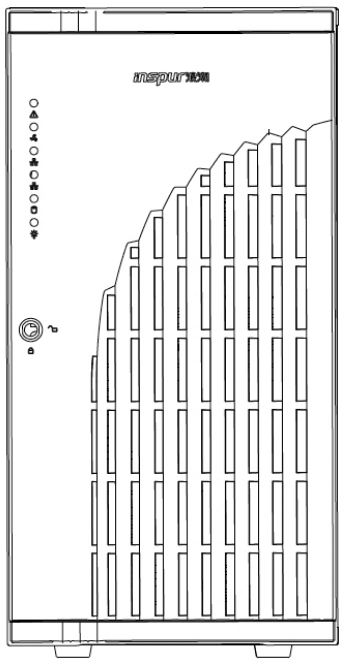
Processors	
Processor Type	Intel Sandy Bridge-EN E5-2400 series CPU
Processor Number	1~2
Processor Interface	Socket 1356
Chipset	
Chipset Type	Intel C600 chipset
Memory	
Memory Type	DDR3 ECC Unbuffered/Registered
Number of memory slots	Up to 12
Total Memory	When single 8G memory is adopted, it can support up to 96GB. The maximum memory capacity will increase with the increase of capacity of single memory board.
I/O Interface	
USB Interface	2 front USB interfaces, 4 rear USB interfaces, 1 built-in Type A USB interface
Serial Interface	1 rear serial interface, 1 built-in serial interface
Network Interface	2 RJ45 network interfaces, 1 exclusive management interface
Display Interface	1 rear VGA interface
ID Indicators and Buttons	
ID Indicators and Buttons	In the back part of the chassis, 1 ID indicator (blue) &1 ID button
Display Controller	
Controller Type	Onboard AST2300 display controller
Video Memory	16MB video memory
HDD Controller	
SAS Controller	Onboard 8-interface SAS, all ROM supported, various RAID levels supported.

SATA Controller	South bridge integrates SATA controller. The motherboard has 4 SATA II interfaces and 2 SATA III interfaces. When standard optical drive is configured, 1 SATA interface is used to connect SATA optical drive.
Management Card	
Management Card Chip	Onboard Aspeed 2300 chip, IPMI2.0+IKVM supported
Management Card Interface	Special IPMI management interface can be used, or reuse the first network card of Intel 82574
Network Card	
Network Card Controller	Onboard Intel 82574 dual-gigabit network card;
PCI Expansion Slot	
PCI Bus Type	PCI/PCI-Express bus, supports vertically inserted full-height expansion card
PCI Slot	3 * PCIE 2.0 x8 slots, support 3 with dual CPU; support 2 with single CPU 2 * PCIE 2.0 x4 slots, support 2 with dual CPU; support 1 with single CPU 1 * PCI slot
Hard Disk	
Hard Disk Type	3.5″ SATA hard disks, 2.5″ SATA and SAS hard disks; different models support different disk types, please refer to the actual configuration.
Hard Disk Number	Support up to 4 pieces of built-in 3.5″SATA hard disks Support up to 16 pieces of hot-swap 2.5″SATA/SAS hard disks
External Storage Drive	
Optical drive (Optional)	Optional SATA optical drive
Inspur driver U disk	Optional Inspur driver U disk used to load hard disk controller driver when installing the operating system manually
Power Supply	
Specification	500W single power supply or above 1+1 redundant power supply
Power Input	Please refer to the specification on the nameplate of host machine.
Physical Specifications	
External size of Package	W (width) 601mm; H (height) 472mm; D (depth) 733mm

Whole Chassis Size	W (width) 220mm; H (height) 435mm; D (depth) 610mm
Weight	Full configuration: Net weight: 25 Kg Gross weight: 28.75 kg (full configuration includes: single power supply + 2 * 2.5″ module + 2 pieces of RAID adapters)
Environment Parameters	
Operating Environment Temperature	10℃ -35℃
Non-Operating Environment Temperature	-40℃ -55℃
Operating Humidity	35%-80% (relative humidity)
Non-operating Humidity	20%-93%(40℃)(relative humidity)

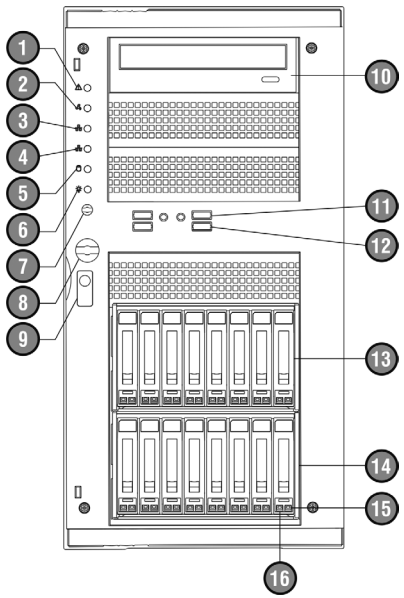
2.2 Front Panel View

The front door of this server can be locked by the chassis lock, as shown in the following picture:

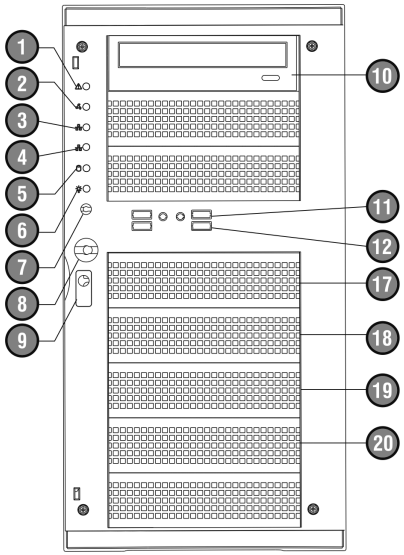


Front door view

The front panel will appear when the front door is opened, and the configuration can be divided into 2.5″ hard disk configuration and 3.5″ hard disk configuration according to the configured different hard disk types. The following picture is just for reference. The actual purchased machine will prevail.



The front panel view of 2.5″ hard disk configuration

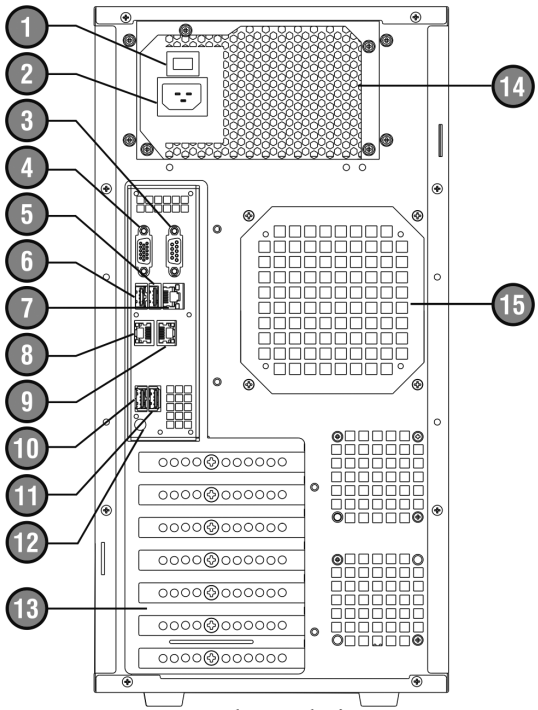


The front panel view of 3.5″ hard disk configuration

1	Power supply failure indicator light	Provide the warning function of power supply failure Off: normal state; On: power supply failure
2	System overheat/fan failure alarm light	Provide the advanced warning function of chassis system overheat and fan failure Off: normal state; On: overheat state or fan failure
3	Network 2 indicator light	Blinking: network connected or transferring data Off: no network connection
4	Network 1 indicator light	
5	Hard disk status indicator	Blink when the non hot-swap SATA hard disk is reading and writing
6	Power indicator light	Always on when the server is operating
7	Reset button	System restart button
8	Power button	Server on/off button
9	Chassis safety lock	Use the chassis key in the accessory box to open the chassis safety lock
10	Optical drive	Different configurations will lead to the different installation places of optical drive
11	USB interface	For connecting USB device
12	USB interface	For connecting USB device
13	9-16 hard disks	2.5″ hard disk configuration: 9-16 pieces of 2.5″ hard disk installation position
14	1-8 hard disks	2.5″ hard disk configuration: 1-8 pieces of 2.5″ hard disk installation position
15	Hard disk failure alarm light	2.5″ hard disk configuration When the hard disk fails, this light is on(Red) When the hard disk is doing the RAID adapter Building, this light is on (Purple) When the hard disk is doing the location, this light is on (Blue)
16	Hard disk status indicator light	2.5″ hard disk configuration SAS hard disk: always on when installing hard disk; blink when the hard disk is reading and writing (Green) SATA: blink when the hard disk is reading and writing (Green)

17	Built-in hard disk 1 installation position	3.5″ hard disk configuration: install built-in 3.5″ SATA hard disk
18	Built-in hard disk 2 installation position	3.5″ hard disk configuration: install built-in 3.5″ SATA hard disk
19	Built-in hard disk 3 installation position	3.5″ hard disk configuration: install built-in 3.5″ SATA hard disk
20	Built-in hard disk 4 installation position	3.5″ hard disk configuration: install built-in 3.5″ SATA hard disk

2.3 Back Panel View



Back panel view

Number	Name	Function and Introduction
1	Power supply switch	When the switch is on, the server can be started by pressing the Power button on the frontend of the chassis, while some optional power supply has no this switch
2	Power supply input interface	For connecting the power cord (the picture above is single power supply configuration example)

3	Serial interface	For connecting serial interface device
4	VGA interface	For connecting display device with VGA interface
5	USB interface	For connecting the USB devices
6	USB interface	For connecting the USB devices
7	IPMI management interface	Onboard IPMI management special interface
8	82574 network card 2 interface	Integrated 82574 network card 2nd interface
9	82574 network card 1 interface	Integrated 82574 network card 1st interface Used as onboard IPMI multiplex management interface
10	USB interface	For connecting the USB device
11	USB interface	For connecting the USB device
12	ID light and ID button	After the server connects with the power supply, press this button and this light is blue to locate the machine. The light will be off when you press it again
13	PCI and PCI-E expansion slot	Support external full height PCI and PCIE expansion card
14	Power supply fan	Power supply attached cooling fan
15	System fan	System cooling fan

Chapter Three System Setup

In this chapter, the regular jumper of motherboard and BIOS function setup of this server are introduced. Only operator or administrator with qualification of system maintenance can implement these operations described in this part.

3.1 System BIOS Setup

BIOS is a basic input and output system. With some special setting programs, it can adjust the system parameter and the hardware parameter. As BIOS has great influence on the starting and running of the system, setting parameters improperly may arise the conflict among hardware resources, or affect the system's performance. Hence understanding the BIOS setup is significant to server configuration. If there is no especial requirement, we suggest you use the default value and not alter the parameters.

Notes:

1.Before the server BIOS setup is altered, please record the corresponding original setup. Hence when there are operating problems in the system due to the alteration, the setup can be restored.

2.The factory default system setup is usually the optimized setup. Don't try to alter the parameters before you understand their denotations.

3.The common setup is introduced in detail in this chapter. For items less used in the application, this chapter only offers simple instruction or just omits the instruction.

4.The contents of the BIOS may differ due to the different configurations of products; no detailed introduction will be provided here.

3.1.1 How to Enter the BIOS Setup

Power up and start the server. When the picture of "Press <DEL> to SETUP or <TAB> to POST", press [DEL], wait for a while and then the system enters BIOS setup.

If the system does not enter BIOS setup after previous steps, please press [Ctrl]-[Alt]-[Del] at the same time to reset the system, and repeat operations above. (If the prompt displays to press [DEL] again, please press it quickly.)

Notes: some items in BIOS cannot be configured, for example, information of sys-

tem detecting and configuration. For some items, there is a right pointer, which means if you select this item and press [Enter], cascading menu or submenu will be displayed on the screen.

3.1.2 BIOS System Menu Introduction

Next the following main function menus of BIOS are introduced.

Menu Name	Menu Function
Main	Configuring the basic system settings, such as system time, system date, displaying BIOS information, etc.
Advanced	Configuring CPU, integrated SATA controller and other advanced characteristics
Chipset	Configuring memory mode, CPU characteristics, etc.
Server Mgmt	Configuring server management functions.
Boot	Configuring boot priority of system devices
Security	Configuring the super system user and password.
Save & Exit	Saving or exiting BIOS setup, etc

Introduction of operational keys:

Button	Description
↑(up)	For selecting the upper menu or value
↓(down)	For selecting the next menu or value
←(left)	For selecting the left menu or value
→(right)	For selecting the right menu or value
Esc	For returning to the superior menu or the main menu
+	For changing the item value For changing the current menu item into the previous item value The key only displays the item values relevant to the item itself rather than all the item values
-	For changing the item value For changing the current menu item into the next item value
F1	The help key for displaying the relevant introduction of current menu The key only displays the item values relevant to the item itself rather than all the item values
F2	For recovering the previous default configuration
F9	For recovering the optimized performance configuration
F10	For saving CMOS settings and exiting
Enter	For executing current command or entering the submenu

1. Main menu

In BIOS setup utility, Main menu first displays. In this menu, BIOS version and memory capacity can be viewed. System time, date, etc. also can be set up in this menu.

While setting the system date and time, please use arrow keys to select, press [Enter] to select a certain sub field, and then use [-] and [+] button to set the 0 field value.

● BIOS Information

It displays the version of system BIOS and when the BIOS is altered.

● Memory Information

It displays the system memory capacity.

● System Date

Set the system date, in format of [week month/day/year].

● System Time

Set the system time, adopting 24 hour system, in format of [hour/minute/second]

2. Advanced menu

This menu is mainly applied to set advanced characteristic items. Improper setup can result in abnormal system operation. Default configurations are strongly recommended.

The following are the introductions for main and common-used menus or items.

● CPU Configuration

* Socket 0/1 CPU Configuration

This menu is used to display detailed information of currently installed CPU.

* Hyper-threading

CPU hyper-treading function setup includes [Disabled] and [Enabled] (default configuration) two items.

* Active Processor Cores

To configure the number of inner cores of every current CPU, including <All> (default configuration), <1>,<2>,<4> options.

* Intel(R) Virtualization Technology

CPU virtualization tech supports function setup, including [Disabled] and [Enabled] two items. It is defaulted to [Enabled].

* CPU Power Management Configuration

This menu enables the user to enter the CPU power management

● SATA Configuration

This item displays the status of all the SATA devices connected to different SATA

interfaces, and enables the user to set SATA controller model and all SATA interfaces.

* SATA Mode

This item is used to set onboard SATA controller modes including [Disabled], [IDE Mode], [AHCI Mode] and [RAID Mode] four items.

If you want to use serial devices as parallel IDE storage devices when onboard SATA controller is used, please set this item to [IDE Mode].

If you do not use RAID and want to connect 1-6 SATA devices when onboard SATA controller is used, please set this item to [AHCI Mode].

If you want to use Intel SATA HostRAID when onboard SATA controller is used, please set this item to [RAID Mode] (only Windows system is supported at this time).

* Serial-ATA Controller 0

This item only appears when SATA Mode option is set to [IDE Mode]. When set to <Enhanced>, it can support 4 SATA 3.0Gb/s devices.

* Serial-ATA Controller 1

This item only appears when SATA Mode option is set to [IDE Mode]. When set to [Enhanced], it can support 2 SATA 3.0Gb/s devices.

● USB Configuration

This menu is used to set some configuration related to USB and displays the USB devices automatically detected by the system.

* Legacy USB Support

The traditional USB devices support function setup and there are three options <Enabled>, <Disabled> and <Auto>. If set it to [Auto], the default does not support traditional USB devices when USB devices are not connected.

● Onboard LAN Configuration

* Launch PXE Oprom

This item is used to open or close the PXE function of onboard network card, including [Disable] and [Enable] (default configuration) two items.

When this item is set to <Enabled>, correspondingly, the user has to select to use network card of PXE function.

3. Chipset Menu

● CPU Advanced Settings

This menu is used for the setup of QPI related information and memory related items.

* QPI Configuration

The submenu of this menu can set up QPI speed mode, frequency and other items.

If it is single CPU configuration and the "QPI Link Speed Mode" is set to be <Fast>, the displayed status of "Current QPI Link Speed" item is "Slow".

* DIMM Information

This menu can be used to examine the information of installation slots and memory capacity of system memory.

* Intel(R) I/0AT

This item is used to open or close Intel I/O acceleration technology, including [Enabled] and [Disabled] (defaulted setting) two items.

* VGA Priority

Set priority order of integrated graphic card and external graphic card, including

[Offboard] (Default configuration): the external graphic card is set to be the prior device.

[Onboard]: onboard graphic card is set to be the prior device.

* Memory Mode

Set Memory mode, including [Independent], [Mirroring], [Lock Step] and [Sparing] four items.

If the system memory configuration supports <Mirroring> and <Sparing>, the two function modes status displayed above this configuration item should be "Supported", otherwise, the status should be "Not Possible".

To realize <Mirroring> function, the second and third memory slot corresponding to the CPU0 and CPU1 should be full of memories (under two CPU configuration, 8 pieces of memory should be inserted), and the second channel and third channel mirroring can be achieved. At this time, the first channel memory slot of CPU0 and CPU1 (respectively CHA_* and CHD_*) should be empty of memory. In this mode, system available memory capacity reduces to half.

To realize <Sparing> (Memory standby) function, two pieces of 1 Rank and 2Rank memory should be installed in the respective channels of CPU0 or CPU1, namely, it only supports memory standby in unit of Rank in the channel

* DDR Speed

This item is used to set DDR speed.

If the system is configured with 4Rank memory of DDR3 1066/1333MHz installed in the first DIMM of the first channel, the system Memory speed will be limited in 800MHz, and [Force DDR3 1066/1333] will not function.

● PCH

Display PCH chip related information and set PCH chip parameters.

* SMBus Controller

This item is used to open or close system management bus, including [Enabled] (default) and [Disabled] two items.

* Restore AC Power Loss

Set power supply status after system powers off abnormally. It includes the following setup items:

[Power off] (Default): the shutdown status which needs to start up manually.

[Last State]: the power down status.

[Power on]: the startup status.

* SCU devices

This item is used to open or close onboard SAS controller. It includes the following setup items:

[Enabled] (default configuration): open onboard SAS controller

[Disabled]: close onboard SAS controller

* Onboard SAS Oprom

This item is used to open or close integrated SAS controller ROM, including [Enabled] and [Disabled] (default configuration) two items.

When “SCI devices” item is set to <Disabled>, this item is automatically hidden.

When this item is set to be <Disabled>, it can connect 4 pieces of SATA hard disks as storage. Please set this item as <Enabled> when the server is connected to SAS hard disks or SATA hard disks as system disks.

* Onboard SATA RAID Oprom

This item is used to open or close integrated SATA RAID controller ROM, including [Enabled] (default configuration) and [Disabled] two items.

● ME Subsystem

This menu is used to set ME subsystem.

* ME Subsystem

This item is used to open or close ME subsystem, when it is set to be [Enabled] (default configuration), the user can check ME relevant information.

4.Server Mgmt menu

● Wait for BMC

This item is used to set up whether waiting for BMC startup or not, including [En-

abled] and [Disabled] (default configuration) two items.

● System Event Log

This menu shows the features of system event log. Any configuration modification in this menu will take effect only after system restart.

* SEL Components

This item is used to set whether the system shall record all the logs from system starts, including [Enabled] and [Disabled] (default configuration) two items. If it is set to be [Enabled], the user can also set the log-clear method and other configurations.

* Erasing SEL

This item is used to configure the method of log clearance. It includes the following three items:

[No] (default configuration): the system has no log erasing setup.

[Yes, On next reset]: erase the log on the next reset.

[Yes,On every reset: erase the log on every reset.

* When SEL is Full

This item is used to set the approach when event logs reach the maximum record number. It includes the following two items:

[Do nothing] (default configuration): do nothing about the log.

[Erase Immediately]: erase the log immediately.

● BMC Network Configuration

This menu is used to set up the configuration information of BMC network interface.

* Lan channel 1

Related items of this menu can be used to setup the access method to IP address when 82574 network card 1st works as multiplex management interface

When it is set to [Static], the user has to manually set the information, such as IP address, subnet mask and router IP address. When it is set to [Dynamic] (default configuration), the user does not need to set the previous items.

*Lan channel 2

Related items of this menu can be used to set up the access method to IPMI management dedicated interface IP address. When it is set to [Static], the user has to manually set the information, such as IP address, subnet mask and router IP address. When it is set to [Dynamic] (default configuration), the user does not need to set the previous items.

● System Health Information

This menu enables user to check CPU temperature, memory slot temperature, PCH temperature, fan speed, voltage and other information.

● View System Information

This menu enables user to check detailed information of the system, such as system manufacturer, product name and other information.

5. Boot menu

Boot menu is mainly used in system boot process and to set the configuration of system devices boot priority.

● Quiet Boot

This item is used to set the displaying status during system startup process. If the system is set to [Disabled], it shows normal self-check information when system boots. If the system is set to [Enabled] (default configuration), it shows the logo of manufacturer.

●Boot Option #1/#2

Select certain boot order device item. Press <Enter> button and the system will display optional boot device table. Then select a device through arrow key in the table and press [Enter] to finish the setting of the boot order item.

● Hard Drive BBS Priorities

Press <Enter> to enter the sub items of this menu and set up the boot order of the hard drives.

6. Security menu

● Administrator Password

This menu is used to set up system administrator password. After the setup of the administrator password, you must input the password when entering the BIOS setup progress. Otherwise, some administrator right will be limited.

● User Password

This menu is used to set up user password. After the setup of the user password, you must input the password when booting and entering the BIOS setup progress. In the setup interface of BIOS Setup, you have the same authority with the administrator after entering the password.

7.Save & Exit menu

The items in this menu can be used to save or discard the settings of the changes in the BIOS and exit the setting program.

● Save Changes and Exit

Select this item and press [Enter]. After you select <Yes> for confirmation, the changes in the BIOS settings will be saved and the system will exit the BIOS setup. The menu function can use [F10] shortcut key to realize.

● Discard Changes and Exit

Select this item and press [Enter]. After you select <Yes> for confirmation, the changes in the BIOS settings will be discarded and the system will exit the BIOS setup.

● Save Changes and Reset

Select this item and press [Enter]. After you select <Yes> for confirmation, the changes in the BIOS settings will be saved and reboot the computer.

● Discard Changes and Reset

Select this item and press [Enter]. After you select<Yes> for confirmation, the changes in the BIOS settings will be discarded and reboot the computer.

● Saving Changes

Select this item and press [Enter]. After you select <Yes> for confirmation, the changes in the BIOS settings will be saved and the system will not exit the BIOS setup.

● Discard Changes

Select this item and press [Enter]. After you select <Yes> for confirmation, the changes in the BIOS settings will be discarded and the system will not exit the BIOS setup.

● Restore Defaults

Select this item and press [Enter]. After you select <Yes> for confirmation, the system will load system default optimization setup and the system will not exit the BIOS setup. This menu function can use [F9] shortcut key to realize.

● Save as User Defaults

Select this item and press [Enter]. After you select <Yes> for confirmation, the system will save the current items setup values of the BIOS as the user default value.

● Restore User Defaults

Select this item and press [Enter]. After you select <Yes> for confirmation, the system will load user default values.

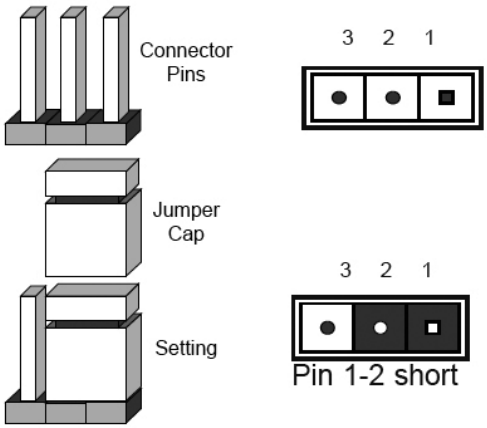
● Boot Override

Select the device item of this menu. After you select <Enter> for confirmation, then it will boot system from the selected device.

3.2 Motherboard Jumper Settings

Motherboard jumper setting is the operation of shorting cut two pins of the jumper

to change the interface functions. Refer to the following figure, and adjust the motherboard functions.



3.2.1 How to Open the Front and Side Panel of Chassis

If motherboard jumper change is needed, please get the authorization of Inspur Group Co., Ltd. according to the methods as follows to open the chassis front panel and side panel:

(1) Open the front panel using the chassis key in the accessory box

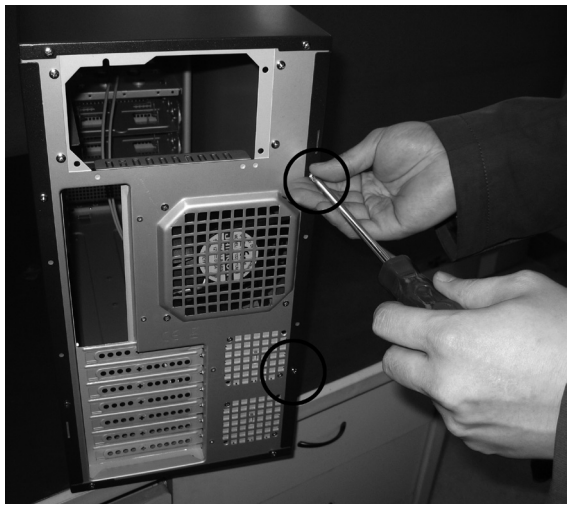
(2) Open the front door and loosen the four screws as shown in the circle in the following picture.

Loosen the four fixing screws on the chassis front panel

(3) Press the bottom of the chassis front panel with hand and pull it out to the direction indicated by an arrow, then take it off.

Take off the chassis front panel

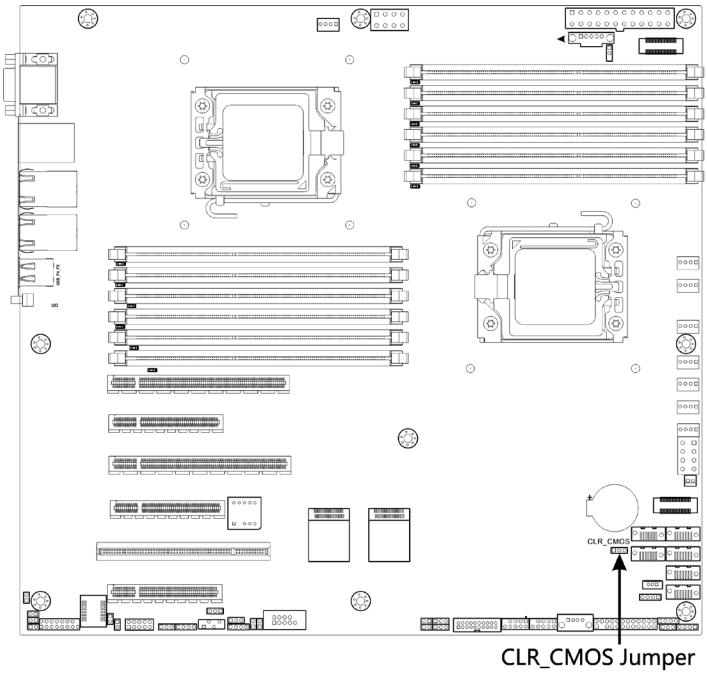
(4) Loosen the 2 screws fixing side panel in the following figure and open the right side panel (see from the rear of the chassis)



Take off the side panel

3.2.2 Introduction of Common Motherboard Jumper Function

In following is the layout of common motherboard jumper:



Motherboard common use jumper location picture

Jumper name	Function description	Jumper function
CLR_CMOS	Clear CMOS jumper	Short-cutting pin1 and 2, normal state (default) Short-cutting pin2 and 3, clear CMOS:

Notes:

1. When clearing CMOS, the system must be shut down and cut off the power supply. Short cut pin2-3 for 5 seconds. And then reuse jumper cap to short cut Pin1 and Pin2 (default state) and restore to the original state.

2. After the jumper operation, please install the upper panel of the chassis.

Chapter Four Setup of SATA RAID

This chapter mainly introduces the configuration of onboard Intel SATA controller HostRaid and its application method. If the server you purchased does not use onboard SATA HostRaid, you can skip this chapter.

If it does use onboard SATA HostRaid, please enter BIOS and set Advanced→SATA Configuration→SATA Mode option to [RAID Mode] and it only supports Windows system at this point.

4.1 How to Enter the Configuration Interface of SATA

1. During boot, the screen will display:

Press [CTRL-I] to enter Configuration Utility…

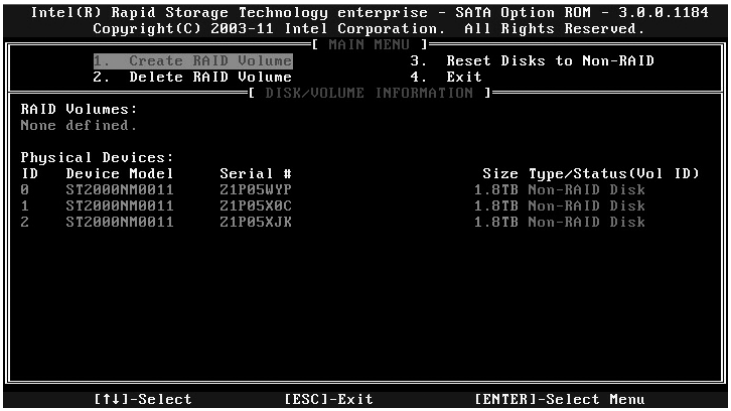
2. At this time, press [Ctrl][I] to enter SATA Host RAID configuration interface.

4.2 Control Key Application

Key	Description
<↑><↓>	For moving cursor and modifying menu option value in different menus
TAB	For selecting the next menu configuration items
Enter	For selecting menu
Esc	For exiting menu or back to the previous menu from submenu

4.3 SATA HostRAID Setup

After entering the SATA HostRAID configuration interface, these information will pop out, including the menu list information, the information of the HDDs connected to the SATA controller (HDD ID number, HDD model, HDD capacity and whether the HDD is part of the volume, etc), and the existing RAID volume information (including volume ID number, name, RAID level, capacity, state and whether can boot, etc.), as shown in the below figure:


Intel(R) Rapid Storage Technology enterprise - SATA Option ROM - 3.0.0.1184
Copyright(C) 2003-11 Intel Corporation. All Rights Reserved.
[MAIN MENU]
1. Create RAID Volume
2. Delete RAID Volume
3. Reset Disks to Non-RAID
4. Exit
[DISK/VOLUME INFORMATION]
RAID Volumes:
None defined.
Physical Devices:
ID Device Model Serial # Size Type/Status(Vol ID)
0 ST2000NM0011 Z1P05WYP 1.8TB Non-RAID Disk
1 ST2000NM0011 Z1P05X0C 1.8TB Non-RAID Disk
2 ST2000NM0011 Z1P05XJK 1.8TB Non-RAID Disk
[↑↓]-Select
[ESC]-Exit
[ENTER]-Select Menu

The executable menus of the configuration interface of SATA HostRAID are the following four:

- Create RAID Volume

  Create RAID volume.

- Delete RAID Volume

  Delete existing RAID volume.

- Reset Disks to Non-RAID

  Reset HDDs in volume to non-RAID state.

- Exit

Exit the configuration interface of SATA HostRAID.

Ⅰ. Create RAID Volume menu

After entering the configuration interface of SATA HostRAID, it can select the menu with up and down arrow keys, and then press [Enter] key to create RAID volume menu.

The system will display the following menu options:

Name: Please input the volume name of less than 16 characters without special characters.

RAID Level: Please select RAID volume level. If it has not created volume at present, there are four volumes for selection, such as RAID0 (Stripe), RAID1(Mirror), RAID10 (RAID0+1) and RAID5 (Parity), and please select the levels based on the actual demand.

RAID0: it allows 2 or more than 2 hard disks to form this RAID volume.

RAID1: it allows 2 hard disks to form this RAID volume.

RAID10: it allows 4 hard disks to form this RAID volume with 4 or more hard

disks.

RAID5 (Parity): it allows 3 and more than 3 hard disks to form this RAID volume.

Disks: select hard disks to be used to form RAID volume, select this option and press [Enter] key. It will enter the hard disk selection interface. Please press [Space] key to select the hard disk in turn to form RAID volume, and then press [Enter] key to return to the menu interface of volume creation.

If the configured HDD number can only meet the minimum number requirement of corresponding RAID level, there is no need for selecting HDDs by user self.

Strip Size: please select the size of strip of volume, and only volumes RAID0 and RAID5 can select this option.

Capacity: Set the size of volume capacity, which is defaulted as the maximum capacity.

After all the settings above have been done well, please select<Create Volume>, and press <Enter>. The screen will display:

"WARNING:ALL DATA ON THE SELECTED DISKS WILL BE LOST. Are you sure you want to create this volume? (Y/N):"

If the creation of RAID volume is confirmed, please enter "Y". The volume will then be created, and at the same time all the data on the selected hard disk will be lost.

If not to create RAID volume, please enter "N" and exit the creation of volume.

Here, we enter "Y" and create RAID volume. After the creation, return to the main configuration interface of SATA HostRAID, and the created RAID volume will display in the RAID volume.

Ⅱ. Delete RAID Volume menu

After entering the configuration interface of SATA HostRAID, it can select the menu by up and down arrows, and then press [Enter] key to enter the menu of Delete RAID volume.

System prompts: "Deleting a volume will reset the disks to non-RAID. Warning: ALL DISKS DATA WILL BE DELETED."

If it confirms to delete RAID volume, please press <DEL> key. And the system will pop up again the warning: "ALL DATA IN THE VOLUME WILL BE LOST! Are you sure you want to delete "Volume*"? (Y/N):". If confirming to delete RAID volume, please enter "Y". And if you want to cancel the operation of deleting RAID volume, please enter "N".

III. Reset Disks to Non-RAID menu

After entering the configuration interface of SATA HostRAID, you can select the menu by up and down arrows, and then press [Enter] key to enter the menu.

The system will display all hard disks in RAID volume. Please select hard disks to be reset by [Space] key based on actual demand, and then reset hard disk by pressing [Enter] key. The system will again warn whether there is a need to reset the hard disk, and enter Y or N according to the prompts.

Note: when resetting the hard disks, all data on hard disk will be lost, and at the same time the hard disk will not again belong to RAID volume.

IV. Exit menu

After entering the configuration interface of SATA HostRAID, you can select the menu by the up and down arrows, and then press [Enter key] to enter the menu.

System prompts: “Are you sure you want to exit? (Y/N):”. Enter “Y”, and then it will exit the configuration interface of SATA HostRAID. If entering “N”, it will cancel the operation and exit.

Chapter Five SAS RAID Setup

This chapter mainly introduces the configuration and using method of onboard SAS RAID controller. If the server you purchased doesn't use onboard SAS RAID, it is not necessary to refer to this chapter.

If you want to use onboard SAS RAID, you need to enter BIOS and set Chipset→PCH→Onboard SAS Oprom to <Enabled>.

According to the difference of configured HDD number and integrated SAS RAID volume, it needs to optionally configure corresponding type of Upgrade ROM and install to the motherboard.

5.1 How to Enter the Configuration Interface of SAS RAID

1. During boot, the screen will display:

Press [CTRL-I] to enter Configuration Utility…

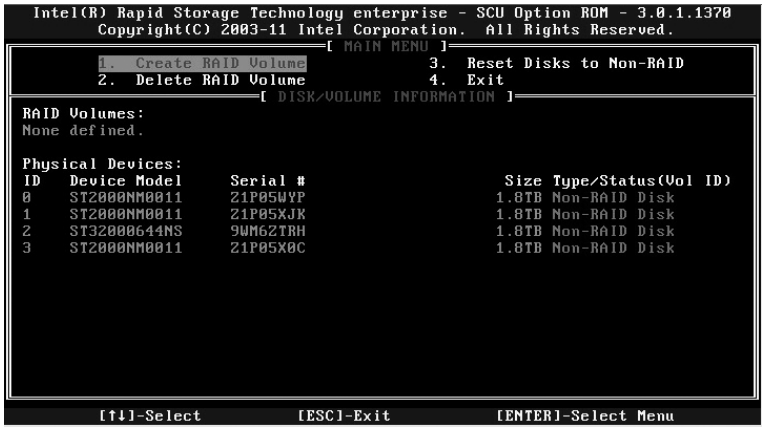
2. At this time, press [Ctrl][I] to enter SAS RAID configuration interface.

5.2 Control Key Application

Key	Description
↑↓	For moving cursor and modifying menu option value in different menus
TAB	For selecting the next menu configuration items
Enter	For selecting menu
Esc	For exiting menu or back to the previous menu from submenu

5.3 SAS RAID Setup

After entering the SAS RAID configuration interface, these information will pop out, including the menu list information, the information of the HDDs connected to the SAS controller (HDD ID number, HDD model, HDD capacity and whether the HDD is part of the volume, etc), the existing RAID volume information (including volume ID number, name, RAID level, capacity, state and whether can boot information), as shown in the below figure:


Intel(R) Rapid Storage Technology enterprise - SCU Option ROM - 3.0.1.1370
Copyright(C) 2003-11 Intel Corporation. All Rights Reserved.
[MAIN MENU]
1. Create RAID Volume
2. Delete RAID Volume
3. Reset Disks to Non-RAID
4. Exit
[DISK/VOLUME INFORMATION]
RAID Volumes:
None defined.
Physical Devices:
ID Device Model Serial # Size Type/Status(Vol ID)
0 ST2000NM0011 Z1P05WYP 1.8TB Non-RAID Disk
1 ST2000NM0011 Z1P05XJK 1.8TB Non-RAID Disk
2 ST32000644NS 9WM6ZTRH 1.8TB Non-RAID Disk
3 ST2000NM0011 Z1P05X0C 1.8TB Non-RAID Disk
[↑↓]-Select
[ESC]-Exit
[ENTER]-Select Menu

The executable menus of the configuration interface of SAS RAID are the following four:

- Create RAID Volume

  Create RAID volume.

- Delete RAID Volume

  Delete existing RAID volume.

- Reset Disks to Non-RAID

  Reset HDDs in volume to non-RAID state.

- Exit

Exit the configuration interface of SAS RAID.

Ⅰ. Create RAID Volume menu

After entering the configuration interface of SAS RAID, it can select the menu with up and down arrow keys, and then press [Enter] key to create RAID volume menu or you can input the number key in front of the menu directly to create RAID volume menu.

The system will display the following menu options:

Name: Please input the volume name of less than 16 characters without special characters.

RAID Level: Please select RAID volume level. If it has not created volume at present, there are four volumes for selection according to the number of HDDs, such as RAID0 (Stripe),RAID1(Mirror), RAID10 (RAID0+1) and RAID5 (Parity), and please select the levels based on the actual demand.

RAID0: it allows 2 or more than 2 hard disks to form this RAID volume.

RAID1: it allows 2 hard disks to form this RAID volume.

RAID10: it allows 4 hard disks to form this RAID volume with 4 or more hard disks.

RAID5 (Parity): it allows 3 and more than 3 hard disks to form this RAID volume.

Disks: select hard disks to be used to form RAID volume, select this option and press [Enter] key. It will enter the hard disk selection interface. Please press [Space] key to select the hard disk in turn to form RAID volume, and then press [Enter] key to return to the menu interface of volume creation.

If the configured HDD number can only meet the minimum number requirement of corresponding RAID level, there is no need for selecting HDDs by user self.

Strip Size: please select the size of strip of volume, and only volumes RAID0 and RAID5 can select this option.

Capacity: Set the size of volume capacity, which is defaulted as the maximum capacity.

Alter all the settings above have been done well, please select<Create Volume>, and press <Enter>. The screen will display:

"WARNING:ALL DATA ON THE SELECTED DISKS WILL BE LOST. Are you sure you want to create this volume? (Y/N):".

If the creation of RAID volume is confirmed, please enter "Y". The volume will then be created, and at the same time all the data on the selected hard disk will be lost.

If not to create RAID volume, please enter "N" and exit the creation of volume.

Here, we enter "Y" and create RAID volume. After the creation, return to the main configuration interface of SAS RAID, and the created RAID volume will display in the RAID volume.

Ⅱ. Delete RAID Volume menu

After entering the configuration interface of SAS HostRAID, it can select the menu by up and down arrows, and then press [Enter] key to enter the menu of Delete RAID volume.

System prompts: "Deleting a volume will reset the disks to non-RAID. Warning: ALL DISKS DATA WILL BE DELETED."

If it confirms to delete RAID volume, please press <DEL> key. And the system will pop up again the warning: "ALL DATA IN THE VOLUME WILL BE LOST! Are

you sure you want to delete “Volume*”? (Y/N):”. If confirming to delete RAID volume, please enter “Y”. And if you want to cancel the operation of deleting RAID volume, please enter “N”.

III. Reset Disks to Non-RAID menu

After entering the configuration interface of SAS HostRAID, you can select the menu by up and down arrows, and then press [Enter] key to enter the menu or input directly.

The system will display all hard disks in RAID volume. Please select hard disks to be reset by [Space] key based on actual demand, and then reset hard disk by pressing [Enter] key. The system will again warn whether there is a need to reset the hard disk, and enter Y or N according to the prompts.

Note: when resetting the hard disks, all data on hard disk will be lost, and at the same time the hard disk will not again belong to RAID volume.

IV. Exit menu

After entering the configuration interface of SAS RAID, you can select the menu by the up and down arrows, and then press [Enter key] to enter the menu.

System prompts: “Are you sure you want to exit? (Y/N):”. Enter “Y”, and then it will exit the configuration interface of SAS RAID. If entering “N”, it will cancel the operation and exit.

Chapter Six Install Operating System

This chapter primarily focuses on the method for manually installing the prevailing operating system to the server. Ruijie Server Kit support the intelligent and automatic installation of mainstream Windows operating system and Linux operating system. As for the actual operating system supported, the optional operating system versions in the drop-down menu of <Select the Operating System> in the software prevail. What's more, some configuration of the server may not support the automatic installation of these operating systems (such as SATA HostRAID configuration), you need to install other version of the operating system manually according to the actual demands.

During manual setup of the operating system, some operating system may need the floppy drive or Inspur driver U disk to load the driver of hard disk controller. Refer to the readme.pdf file under the root directory in Inspur driver CD for the making method of the driver floppy disk. If the configuration you purchased is configured with Inspur driver U disk, you may refer to relevant contents of this chapter for the making method of Inspur driver U disk.

If your server is configured with external RAID card or SAS sub-card, please refer to the electronic version of User Manual in the CD of external RAID card or SAS sub-card to load the driver of the hard disk controller. If it uses onboard SATA controller, please make the driver of controller according to the attached driver CD. For network card driver, video driver and system patch program, the guidance in the chapter can also be referred for setup.

This installation instruction states the manual installation of operating system, taking two configurations of onboard SATA HostRAID and onboard SATA AHCI as examples. If your server is configured with other external RAID card, please load the HDD controller drive by referring to the user manual in the attached CD. As for the network drive, display card and system patch program, you can still refer to this chapter.

It is suggested that you confirm in advance that whether the purchased machine configuration supports the version of the operating system to be installed.

6.1 Application Instructions for Inspur driver U disk

Under Windows system and Linux system, Inspur driver U disk can be identified

as two parts: virtual floppy driver [3.5 floppy disk (A :)] and normal partition of U disk [UDISK PRO]. When you install some operating systems manually, you can use Inspur driver U disk to load the drive of hard disk controller (at present, the operating systems that use Inspur driver U disk to load the hard disk controller support Windows XP or above versions, Red Hat Linux 4.5 or above versions, and Suse Linux 9.0 SP2 or above versions).

Warning:

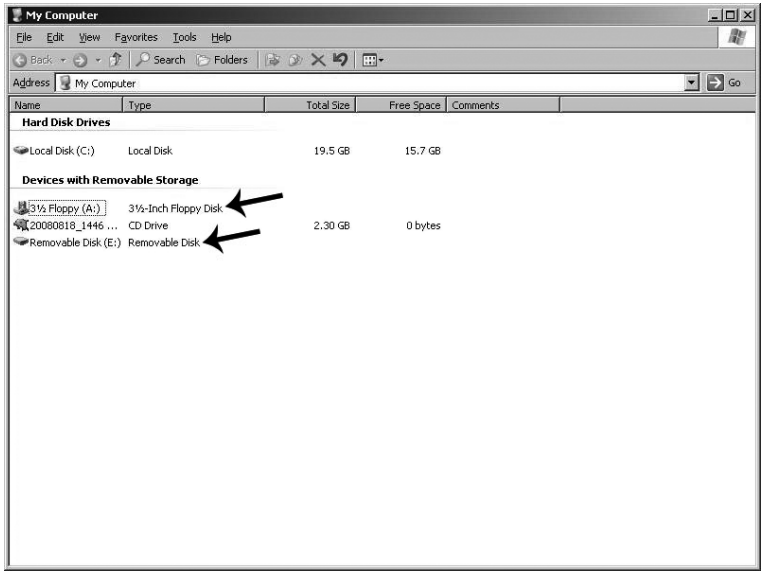
During the installation of the operating system by using Inspur driver, it may detect Inspur driver U disk on the disk partition interface. At this moment, the user must distinguish U disk from hard disk, and never delete or format U disk.

During the installation of the operating system, if it needs to boot the system from hard disk after reboot, it must enter the server BIOS for setting to ensure the starting sequence of hard disk is prior to the starting sequence of U disk and the system can boot from the disk. If the starting sequence of U disk is prior to the starting sequence of hard disk, the system will fail to boot from hard disk.

The following introduces the making method for the driver of onboard hard disk controller when using Inspur driver U disk to install the operating system. For driver making of external RAID card or SAS card, please refer to the corresponding contents in the driver CD of external board card.

Make Driver

1. Prepare a set of computer installed with Windows system, and connect the Inspur driver U disk to the USB interface of the computer, as shown in the picture below. Inspur driver U disk will be identified as two parts: virtual floppy driver [3½ Floppy (A:)] and normal partition of U disk [Removable Disk (E:)], in which, the disk character E in [Removable Disk (E:)] will be different according to the actual partitions of your computer.


My Computer
File Edit View Favorites Tools Help
Back Search Folders
Address My Computer
Go
Name Type Total Size Free Space Comments
Hard Disk Drives
Local Disk (C:) Local Disk 19.5 GB 15.7 GB
Devices with Removable Storage
3½ Floppy (A:) 3½-Inch Floppy Disk
20080818_1446 ... CD Drive 2.30 GB 0 bytes
Removable Disk (E:) Removable Disk

Notes: Before connecting the Inspur driver U disk to the computer, if your computer is configured with standard floppy, please enter BIOS and close this standard floppy; if your computer is connected with USB floppy, please first disconnect USB floppy. It must guarantee that when the Inspur driver U disk is connected to your computer, the disk character of virtual floppy driver under Windows system shall be identified to be A:, and only by this can the subsequent normal driver making be guaranteed.

2. Put the driver CD (Inspur system driver CD and RAID card driver CD) into optical drive, and the driver making software will operate automatically. If the system forbids the automatic operation of CD, please enter CD directory and operate dolphin. bat (Inspur system driver CD) in CD or setup.exe (RAID card driver CD) in CD directory.

3. Methods for making drivers by using Inspur driver CD:

(1) After operating dolphin.bat documents, the system will enter the interface of "Welcome to Inspur driver CD"

Two methods to enter drive making software main interface, as sollows:

● In the text box below “Please input navigation No.”, input navigation No (check navigation No. on CD set or name plate), then log in the drive making software main interface. Click <Exit> to exit the log-in.

● In the drop-down menu below “Please select the machine type” , select the specific product model (the specific model , please refer to host nameplate label).

(2) After inputting the navigation No. and logging in, enter the main interface of driver making software, and the main interface is shown in the following picture:

(3) After you select the corresponding operating system and the controller driver to be made according to the actual need, click [Next] button and make corresponding driver. Different operating systems correspond to different making interfaces and methods of the driver.

● Driver making of Windows system

When the driver of Windows operating system is made, copy the driver directly into the virtual floppy drive A: of Inspur driver U disk.

Select the Windows version to be installed and driver to be made, and then click [Next].

The system will display a prompt as shown in the following picture. Please confirm that Inspur driver U disk is well connected. Format the virtual floppy drive A: of Inspur driver U disk, and then click [OK] to start the driver making.

After the driver making is completed, the system will pop up the window, prompting “Driver has been completed”. Click <OK> to complete the making of driver.

● Notices for using Inspur driver U disk to load driver under windows system

During the installation of Windows operating system, if the driver of hard disk controller is loaded by using Inspur driver U disk, entering the interface of disk partition, Inspur driver U disk will occupy a disk letter. If the disk is not partitioned, U disk will occupy disk C:. If the disk has other partitions, U disk will occupy other disk letter (please distinguish according to the actual hard disk partition).

If there are other partitions on the disk, at this moment, it needs to delete all of them and then create new partitions on the hard disk. The U disk will not occupy disk letter any more.

If the disk is not partitioned, it needs to create one disk partition on the unallocated space, and then delete this newly created disk partition. And at this time the U disk will not occupy any disk letter any more. Then create disk partition based on actual need, and complete the installation of operating system according to the instructions.

Notes: Be sure to distinguish U disk from hard disk, and never delete or format U disk.

6.2 Manually Install Windows Server 2008 Enterprise Edition

Notes: Onboard SATA HostRAID configuration does not support Windows Server 2003 operating system.

6.2.1 Preparation Prior to Installation

● Windows Server 2003 Enterprise Edition Installation CD (here taking 64bit as an example to introduce)

● Inspur driver CD

● Intel SATA Hostraid driver_EM64T for Windows 2003 drive

● AHCI driver_EM64T for Windows 2003 drive

● **Please select to make or install the driver corresponding to the version of system according to the operating system version selected to install.**

Note: When making the above driver, if you use USB floppy, please make the driver in the floppy disk; if you use Inspur driver U disk, please make the driver in the Inspur driver U disk.

6.2.2 Installation Steps

1. Connect USB floppy drive or Inspur driver U disk with USB interface of server. Power up and start the server, put the installation CD of Windows Server 2003 into the optical drive and select to boot from CD.

2. When the system prompts “Press any key to boot from CD or DVD”, press any key, and the system will start Windows installation program from CD.

3. When the screen shows “Press F6 if you need to install a third party SCSI or RAID driver...” please press F6 key.

When the system displays “Setup could not determine the type of one or more mass storage…… ”, press [S].

If it is ordinary SATA configuration of onboard SATA controller IDE mode, it is no need to press any key and the system will automatically load HDD controller driver.

If it is onboard AHCI configuration, please press key <F6>.

Notes: when installing EMT64bit version system, if it prompts the server type purchased, you can select configuration according to the detailed configuration of purchased server.

For onboard Intel SATA AHCI configuration, when the system displays "Setup could not determine the type of one or more mass storage…", press 'S' key.

If USB floppy drive is used (please connect USB floppy drive well before the system starts up.)

When the system prompts to insert a floppy disk, insert the corresponding driver floppy disk and press [Enter] key.

⊙ If onboard SATA controller AHCI configuration is used, follow the above operations described above and insert the corresponding program floppy disk "AHCI driver_EM64T for Windows 2003". Select "Intel(R) C600 Series Chipset SATA AHCI Controller" from the drive list and press [Enter] to load driver.

If Inspur driver U disk is used (please connect Inspur driver U disk well before the system starts up.)

Firstly, ensure that the corresponding driver has been made into the **[3.5 Floppy disk (A:)] partition** of the Inspur driver U disk.

⊙ If onboard SATA controller AHCI configuration is used, select "Intel(R) C600 Series Chipset SATA AHCI Controller" from the driver list and then press [Enter] to load driver.

4. The system displays:

Welcome to Setup.

This portion of the Setup program prepares Microsoft(R) Windows(R) to run on your computer.

⊙ To set up Windows now, press ENTER.

⊙ To repair a Windows installation using Recovery Console, press R.

⊙ To quit Setup without installing Windows, press F3.

Here, we default it is the first installation, so press <Enter> key to continue the installation.

5. The system displays Windows Licensing Agreement. The user can read the licensing agreement by pressing <Page Down> key. And after finishing reading or not to read the agreement, you can directly press <F8> key to accept the agreement.

6. The system displays

The following list shows the existing partitions and unpartitioned space on this computer.

Use the UP and DOWN ARROW keys to select an item in the list.

⊙ To set up Windows on the selected item, press ENTER.

⊙ To create a partition in the unpartitioned space, press C.

⊙ To delete the selected partition, press D.

You can select the items based on the actual situation, select the unallocated space here and then press <C> key.

7. Installation program prompts:

⊙ To create the new partition, enter a size below and press ENTER.

⊙ To go back to the previous screen without creating the partition, press ESC.

The minimum size for the new partition is 8 megabytes <MB>.

The maximum size for the new partition is XXX megabytes <MB>.(XXX means the maximum capacity of the disk)

Create partition of size <in MB>:

Press [Backspace] to delete the numeral in the box, input the size of the disk partitions you want to create and then press [Enter] to continue.

Notes: it is suggested that the partition should be more than 30GB.

8. The system displays the interface of Step 6, here select the partition of "Partition1 [New <Raw>]" and press [Enter] key to continue the installation.

9. The system displays:

⊙ Format the partition using the NTFS file system <Quick>

⊙ Format the partition using the NTFS file system

Select "Format the partition using the NTFS file system <Quick>" and press [Enter] to format the disk partition.

10. The system displays the progress bar of formatting.

After the installation program formats the new partitions, it will prompt:

Please wait while Setup copies files to the Windows installation folders.

This might take several minutes to complete.

The system will display the progressive bar of document duplicating.

After the duplication of document, take out the driver floppy disk. The system will restart automatically.

11. After the automatic restart of the system, choose to boot from hard disk. And the system begins to execute operations such as Collecting information, Dynamic Up-

date, Preparing installation, etc. Install Wizard collects related information for installation preparation.

The installation program detects and installs the equipment. During this process, if prompts like 'Software Installation', 'Hardware Installation' and others pop up, click <Yes> to continue. After the completion, the system automatically takes the next step.

12. The system displays Regional and Language Options:

It is suggested using the default setting, and here click <Next> to continue the installation.

13. Personalize Your Software

The installation program will self-define your Windows software based on the personal information you provided.

Type your full name and the name of your company or organization.

Name:

Organization:

The user can fill in according to his actual situations and then click <Next> to continue the installation.

14. Input your Product Key (25-character) and then click <Next> to continue the installation.

15. Licensing Modes

Windows Server 2003 supports two licensing modes.

⊙ Per server. Number of concurrent connections:

Each connection must have its own Client Access License.

⊙ Per Device or Per User.

Each device or user must have its own Client Access License.

The user can select and set according to his needs and then click <Next>.

16. Computer Name and Administrator Password.

After setting the Computer name (it cannot exceed 15 characters) and password (it cannot exceed 14 characters) based on the actual situation, click <Next> to continue the installation.

17. Date and Time Settings.

After setting the correct date and time, click <Next> to continue the installation.

18. The installation program starts a series of relevant tasks such as Installing Network, Copying files,Installing Start menu items, Registering components, Saving settings (the process requires a certain period of time).

19. After the installation, the system will restart automatically and the installation CD shall be taken out.

20. After the restart of the system, press <Ctrl+Alt+Del> to log. Input the user name and password, and click <OK>. After logging in the system, click <Finish> if the system prompts the interface of "Windows Server Post-Setup Security Updates", and then click <Yes> in the pop-up dialog box. Select "Don't display this page at logon" in the interface of "Manage Your Server" and close the windows interface.

21. After Windows Server 2003 operating system installation is completed, please install Windows Server 2003 operating system SP2 patch. If you are using integrated SP2 patch operating system installation CD, there is no need to conduct this installation step.

22. Install Chipset patch

(1) Insert Inspur driver CD into the optical drive. Enter "Welcome to use Inspur driver CD" window, input the navigation code (on the driver CD case) or select machine type (for the specific type, please check the host nameplate tag), and click <OK> to enter the installation interface automatically;

(2) In "Select OS" column, select Windows 2003;

(3) In "Select Hardware" column, select Chipset patch;

(4) Click <Next> to start the installation;

(5) Enter the interface of "Welcome to the Setup Program" and click <Next> to continue the installation;

(6) Enter the interface of "License Agreement", and select <Yes> to continue the installation;

(7) Enter the interface of "Readme File Information", and click <Next> to continue the installation;

(8) The installation program begins to install; and click <Next> according to the prompts;

(9) Setup Is Complete. Click <Finish> according to the prompts, take out the driver CD and restart the system.

23. Install Network card driver

(1) Insert Inspur driver CD into the optical drive. Enter "Welcome to use Inspur driver CD" window, input the navigation code (on the driver CD case) or select machine type (for the specific type, please check the host nameplate tag), and click <OK> to enter the installation interface automatically;

(2) In the “Select OS” column, select Windows 2003;

(3) In the “Select Hardware” column, select Network card driver;

(4) Click <Next> to start the installation;

(5) Enter the interface of “Intel ® Network Connections”, and double click “Install Drivers and Software”;

(6) Enter the interface of “Welcome to the InstallShield Wizard for Intel(R) Network Connections”, and click <Next> to continue;

(7) Enter the interface of “License Agreement”, select “I accept the terms in the license agreement” and then click <Next> to continue;

(8) Enter the interface of “Setup Options” and click <Next> to continue;

(9) Enter the interface of “Ready to Install the Program”, and click <Install> to continue;

(10) The installation program starts to install; when the installation is completed, click <Finish> according to the prompt.

24. Install Video driver

After installing the network card drive, please do not exit the installation interface of driver CD, but continue the installation of video driver installation.

(1) In the “Select OS” column, select Windows 2003;

(2) In the “Select Hardware” column, select Video driver

(3) Click <Next> to start the installation;

(4) Enter the interface of “Welcome to the InstallShield Wizard”, and click <Next> to continue;

(5) Enter the interface of “Ready to Install the Program”, and then click <Install> to start video driver installation;

(6) The installation program starts to install; when the installation is completed, click <Finish> in the interface of “InstallShield Wizard Completed” and the system pops up a prompt that you need to restart the server so that the settings can take effect. Take all the disks out of the drive, and select <Yes> to restart the server.

25. Install IPMI unknown device driver

(1) Enter Windows system; in sequence click <Start>→<Administrative Tools>→<Computer Management>; in the interface of “Computer Management”, open “Device Manager”;

(2) In the interface of “Device Manager”, select <Unknown device> in the <Other devices>, right click and select <Update Driver...>;

(3) The system pops up the window of "Welcome to the Hardware Update Wizard". If the system inquires "Can Windows connect to Windows Update to search for software?", select "No, not this time" and click <Next>;

(4) The system displays the window of "Hardware Update Wizard". Select "Install from a list or specific location (Advanced)", and click <Next> to continue;

(5) Put Inspur driver CD into optical drive, select "Search for the best driver in these locations", select "Include this location in the search", then select the path of driver :\driver\IPMI\driver\win03_64 and click <OK> and then <Next> to continue;

(6) If the system pops up "Security Alert", click <Yes> to continue.

(7) The system prompts "Completing the Hardware Update Wizard". Click <Finish> to complete the installation of "Microsoft Generic IPMI Compliant Device" driver;

26. Install SAS controller driver

(1) Enter Windows system; in sequence click <Start>→<Administrative Tools>→<Computer Management>; in the interface of "Computer Management", open "Device Manager";

(2) In the interface of "Device Manager", select <PCI device> in the <Other devices>, right click and select <Update Driver...>;

(3) The system pops up the window of "Welcome to the Hardware Update Wizard". If the system inquires "Can Windows connect to Windows Update to search for software?", select "No, not this time" and click <Next>;

(4) The system displays the window of "Hardware Update Wizard". Select "Install from a list or specific location (Advanced)", and click <Next> to continue;

(5) Put Inspur driver CD into optical drive, select "Search for the best driver in these locations", select "Include this location in the search", then select the path of driver :\driver\SCU\driver\win_64 and click <OK> and then <Next> to continue;

(6) The system prompts "Completing the Hardware Update Wizard". Click <Finish> to complete the installation of "Intel(R)C600 Series Chipset SAS RAID (SATA mode) Controller" driver;

27. Complete the installation of Windows Server 2003.

6.3 Manually Install Windows Server 2008 Enterprise Edition

6.3.1 Preparation Prior to the Installation

● Windows Server 2008 Enterprise Edition Installation disk (DVD, supporting the

version of 32bit or 64 bit and here taking 64bit as an example to introduce)

● Inspur driver CD

● Intel SATA Hostraid Driver_EM64T for Windows 2008 drive

● AHCI driver_EM64T for Windows 2008 drive

● Please select the corresponding driver to the made or installed version of system according to the operating system version selected to install.

●As for the above mentioned drivers, if USB floppy drive is used, please make the driver into floppy disk; if Inspur driver U disk is used, please make the driver into Inspur driver U disk; if general driver U disk is used, input the disk letter occupied by general U disk and the directory for saving the driver to make the driver into general U disk.

6.3.2 Installation Steps

1. Connect well USB floppy drive or Inspur driver U disk or general U disk, power up to start the server, put the installation CD of Windows Server 2008 into optical drive and then enter BIOS to configure so that the server can boot from CD.

2. Press any key when the system presents “Press any key to boot from CD or DVD” and the system will start Windows installation program from CD.

3. According to actual needs, set Language to install, Time and currency format, Keyboard or input method. And then click <Next> to continue.

4. In the interface of installation confirmation, click <Install now> to continue.

5. The system pops up “Load Driver” window, prompting: A Required CD/DVD drive device driver is missing. If you have a driver floppy disk, CD, DVD, or USB flash driver, please insert it now.

Note: If the Windows installation media is in the CD/DVD drive, you can safely remove it for this step.

If USB floppy drive is used, please put the ready-made driver floppy disk into floppy drive.

If Inspur driver U disk or general U disk is used, please confirm that there is no problem for U disk’s connection;

And then click <Browse> button, select the path of the driver and click <OK>. The system will automatically search the driver.

6. In “Select the driver to be installed” interface, select the driver to be installed and then click <Next> to start loading driver.

7. In “Type your product key for activation” interface, input your product key (25

character), and then click <Next> to continue.

8. In "Select the edition of Windows that you purchased" interface, select the operating system version to be installed, then select "I have selected the edition of Windows that I purchased", and click <Next> to continue.

9. The Microsoft software license clauses will be shown in the interface of "Please read the license terms". Select "I accept the license terms" and after reading, click <Next> to continue.

10. In the interface of "Which type of installation do you want?", select the installation type, and here the default set by us is the first installation. Select "Custom" model to continue.

11. The system enters the interface of "Where do you want to install Windows?". It will display the existing disk partitions and unallocated spaces on the computer. You can conduct the following operations by clicking <Drive options>:

⊙ It can delete the existing partitions by selecting the existing partitions and then clicking <Delete>.

⊙ It can format the partitions by selecting the existing partitions and clicking <Format>.

⊙ It can create new partitions by selecting unallocated disk spaces and then clicking <New> to create new partitions.

You can operate according to the actual demands. Here we'd expound on the issue when there are no existing partitions in the disk.

(1) Select the unallocated space, click <New>, delete the number in the Size input box, then input the one you want to create (unit: MB) and click <Apply> to continue. If the confirmation window pops up, click <OK> to continue.

Note: we suggest the partition should be larger than 30GB.

(2) Select the newly created disk partition, then click <Format>, and click <OK> at the prompt confirmation interface.

(3) After formatting the partition, click <Next> to continue.

12. The system starts to install Windows, and it will complete operations of "Copying files", "Expanding Windows files", "Installing features", "Installing updates" and "Completing installation" etc.. In this course the system may automatically reboot for several times.

13. After the installation is completed, the system would boot to the interface of "The user's password must be changed before logging on the first time." Take out the

installation CD and then click <OK> to continue.

14. Follow the prompt to set the Administrator password and then click the arrow button at the right of the password input box to continue. If the password meets the requirements, it will prompt "Your password has been changed." and then click <OK> to confirm that the password has been changed.

Windows Server 2008 has strict requirement for the password, so it must contain letters, numbers and special characters, or the setting cannot be successful.

15. After logging in the system, select "Do not show this window at logon" at the bottom of the "Initial Configuration Tasks" interface, and then click <Close>. In the new interface of "Server Manager", select "Do not show this console at logon" and close the interface.

16. Install Chipset patch

(1) Insert Inspur driver CD into the optical drive, click the blue dolphin icon under the installation or operation procedure item in the automatically playing interface popped out after the disk's running. Enter "Welcome to use Inspur driver CD" window, input the navigation code (on the driver CD case) or select machine type (for the specific type, please check the host nameplate tag), and click <OK> to enter the installation interface automatically;

(2) In "Select OS" column, select Windows 2008;

(3) In "Select Hardware" column, select Chipset patch;

(4) Click <Next> to start the installation;

(5) Enter the interface of "Welcome to the Setup Program" and click <Next> to continue the installation;

(6) Enter the interface of "License Agreement", and select <Yes> to continue the installation;

(7) Enter the interface of "Readme File Information", and click <Next> to continue the installation;

(8) The installation program begins to install; and click <Next> according to the prompts;

(9) Complete the installation, click <Finish> according to the prompts, take out the driver CD and restart the system.

17. Install Network card driver

(1) Insert Inspur system driver CD into the optical drive, click the blue dolphin icon under the installation or operation procedure item in the automatically playing in-

terface popped out after the disk's running. Enter "Welcome to use Inspur driver CD" window, input the navigation code (on the driver CD case) or select machine type (for the specific type, please check the host nameplate tag), and click <OK> to enter the installation interface automatically;

(2) In the "Select OS" column, select Windows 2008;

(3) In the "Select Hardware" column, select Network card driver

(4) Click <Next> to start the installation;

(5) Enter the interface of "Intel ® Network Connections", and double click "Install Drivers and Software";

(6) Enter the interface of "Welcome to the InstallShield Wizard for Intel(R) Network Connections", and click <Next> to continue;

(7) Enter the interface of "License Agreement", select "I accept the terms in the license agreement" and then click <Next> to continue;

(8) Enter the interface of "Setup Options" and click <Next> to continue;

(9) Enter the interface of "Ready to Install the Program", and click <Install> to continue;

(10) The installation program starts to install; when the installation is completed, click <Finish> according to the prompt.

18. Install Video driver

After installing the network card drive, please do not exit the installation interface of driver CD, but continue the installation of video driver installation.

(1) In the "Select OS" column, select Windows 2008;

(2) In the "Select Hardware" column, select Video driver

(3) Click <Next> to start the installation;

(4) Enter the interface of "Welcome to the InstallShield Wizard", and click <Next> to continue;

(5) Enter the interface of "License Agreement", select "I accept the terms in the license agreement" and then click <Next> to continue;

(6) Enter the interface of "Customer Information", please input User Name and Organization, and the click <Next> to continue;

(7) Enter the interface of "Setup Type", please select installation type in these two choices: "Complete" and "Custom". Here select "Custom", click <Next> to continue;

(8) Enter the interface of "Custom Setup" and click <Next> to continue;

(9) Enter the interface of "Ready to Install the Program", and click <Install> to

start the installation of video driver;

(10) The installation program starts to install; when the installation is completed, click <Finish> in the interface of "InstallShield Wizard Completed" and the system pops up a prompt that you need to restart the server so that the settings can take effect. Take all the disks out of the drive, and select <Yes> to restart the server.

Note: in the above Video driver installation, some installation steps may be different because of the different Windows 2008 system versions to install, please follow the actual installation steps.

19. Install SAS controller driver

(1) Enter the Windows system, and click in turn <Start>→<Administrative Tools>→<Computer Management>; in the interface of "Computer Management", open "Device Manager";

(2) In the interface of "Device Manager", select the <SAS Controllers> in <Other devices>, right click and select <Update Driver Software>;

(3) Enter the interface of "Update Driver Software". When the system asks "How do you want to search for driver software?", please select<Browse my computer for driver software>;

(4) The system prompts "Browse for driver software on your computer". After putting the Inspur driver CD into the optical drive, click the <Browse> button in the back of "Search for driver software in this location:" and select the path of the driver in the CD: \driver\SCU\driver\win_64 (if it is 32bit system, please select \driver\SCU\driver\win_32), and then click <OK>. Click <Next> to continue, and the system begins to install the driver automatically.

(5) The system prompts "Windows has successfully updated your driver software". Click <Close> to finish the installation of Intel(R) C600 Series Chipset SAS RAID (SATA mode) driver.

6.4 Manually Install Red Hat Enterprise Linux 6.1

6.4.1 Preparation Prior to the Installation

● Installation CD for Red Hat Enterprise Linux 6.1 (1 piece of DVD)

6.4.2 Installation Steps

1. Power up and start the system, put the installation CD into the optical drive (here taking using DVD installation disk as example), enter BIOS to set, and make the server boot from the CD.

2. The system enters the interface of “Welcome to Red Hat Enterprise Linux 6.1!”. This includes the following items:

Install or upgrade an existing system

Install system with basic video driver

Rescue installed system

Boot from local driver

You can use up and down arrow key to select items. Here we default that this is the first installation. Select “Install or upgrade an existing system”, and press [Enter] to continue installation.

3. The system prompts Disc Found, To begin testing the media before installation press OK.

Choose [Skip] to skip the media test and start the installation.

Here select <Skip> to skip the disk detection and press [Enter] to continue the installation.

4. The installation program goes to “RED HAT ENTERPRISE LINUX 6” interface; click <Next> to continue the installation.

5. The installation program goes to “What language would you like to use during the installation process?” interface. Select to install language version of the operating system. Here we select “English (English)” for installation and click <Next> to continue.

6. The installation program enters “Select the appropriate keyboard for the system” interface. Please select keyboard type according to actual situation. Here we select “U.S. English” and click <Next> to continue the installation.

7. The installation program goes to What type of devices will your installation involve?

Basic Storage Devices

Installs or upgrades to typical type of storage devices. If you’re not sure which option is right for you? This is probably it.

Specialized Storage Devices

Installs or upgrades to enterprise devices such as Storage Area Networks (SANs). This option will allow you to add Foe/Ischia/Zech disks and to filter out devices the installer should ignore.

Here we select Basic Storage Device, and click <Next> to continue the installation.

8. The system enters Please name this computer. The hostname identifies the computer on a network.

Please input the Hostname.

Here we also can select <Configure Network> on the left bottom of the window to configure the network. You can add or delete the network card to configure the network IP address. After finishing the network configuration, click <Next> to continue the installation.

9. The installation program goes to the time zone selection interface "Please select the nearest city in your time zone:". Select "Asia/shanghai" and then click <Next> to continue the installation.

10. The installation program enters Root Password setting interface, set at least six figures as needed and click <Next> to continue the installation.

The root account is used for administering the system. Enter a password for the root user.

11. The installation program enters "Which type of installation would you like?" This is the installation selection interface, including:

Use All Space

Replace Existing Linux System(s)

Shrink Current System

Use Free Space

Create Custom Layout

This installation takes custom manual partition as an example, so select "Create Custom layout" and click <Next> to continue the installation.

12. The installation program enters the interface of "Select the hard disk to install". In the Data Storage Devices (to be mounted only) list, the system shows the detected storage device. Please select hard disk to install the system according to the actual demand and add this hard disk to "Install Target Devices". Then select a hard disk as "Boot Loader", and click <Next> to continue the installation.

13. When the installation program enters "Please Select A Device" partition creating interface, (if partition has been created on the hard disk, it will be displayed and you can delete it if you do not need it).

Select the Free partition or other existing partitions in the hard disk, the system will pops up "Add Partition".

① Create root partition (/) and boot partition: Select root partition in Mount point: /,

select the hard disk to install the system in Allowable Drives window, input the Size (MB) of partition and click <OK> to finish the creating of root partition. Create the boot partition in the same way: /boot.

② Create a swap partition (Swap). Select "Swap" in File system Type, select the hard disk to install the system in Allowable Drives window, input the size (MB) of the swap partition (set according to the size of memory, if the memory is smaller than 512MB, set as twice of it. If the memory exceeds 512MB, you can set it as 2GB) and click <OK> to finish the creating of swap partition.

You can also create other partitions as needed, and click <Next> to continue the installation after the creation.

14. The system prompts: "Writing storage configuration to disk".

The partitioning options you have selected will now be written to disk. Any data on deleted or reformatted partitions will be lost.

Select "Write changes to disk" to continue installation and the system begins to format hard disk partition.

15. The installation program enters [Boot Loader] setting interface, set as needed and click <Next> to continue the installation.

16. The system prompts: "The default installation of Red Hat Enterprise Linux is a basic server install. You can optionally select different sets of software now".

Please select the type to install and the software package that needs customization according to actual demand, so select "Customize now" and click <Next> to continue the installation.

17. The installation program enters program package selection interface. Please select according to the actual demand. After confirming the selected software package to install, click <Next> to continue the installation.

Here we select the [Desktop] and [X Windows System] in Desktops and [Development tools] software package in [Development].

18. The installation program begins to build file system and copy files.

19. Entering "Congratulations, your Red Hat Enterprise Linux installation is complete." interface indicates the success of installation. Then click <Reboot>, and take out the installation CD. The system would reboot automatically.

20. The system reboots to enter "Welcome" interface; click <Forward> to continue the installation.

21. The installation program enters "License Agreement" interface. Select "Yes, I

agree to the License Agreement" and click <Forward> to continue the installation.

22. The installation program enters "Set Up Software Updates" interface and click <Forward> to continue the installation.

23. The installation program enters "Create User" interface. Set user name and password to add user; click <Forward> to continue the installation.

24. The installation program enters "Date and time" interface, please set the right time and date, and click <Forward> to continue the installation.

25. The installation program enters Kdump setting interface, please set as needed and click <Finish> to finish the installation.

26. Input Username and Password to log in the system.

27. Install network card driver.

After the operating system installation, it will automatically load onboard network card driver. You can use the driver CD attached with the machine to update the network card manually.

(1) Insert Inspur driver CD into the optical drive; click the Terminal menu in Applications→System Tools; input the following in the windows:

```
#cd /
#mount /dev/cdrom  /mnt
#cd /mnt
#cd driver/nic/linux/82574
#cp e1000e-1.9.5.tar.gz  /tmp
#cd /tmp
#tar -zxvf e1000e-1.9.5.tar.gz
#cd e1000e-1.9.5/src
#make install
#cd  /
#umount  /mnt
#reboot
```

Notes: "e1000e-1.9.5.tar.gz" is network card driver, and its version will be updated. When being installed, the actual version in the attached driver CD shall prevail.)

(2) The system will automatically restart; please take out the driver CD.

(3) Log in the system, connect the network wires and configure the network.

Chapter Seven Common Problems and Trouble-shooting

This chapter focuses on the common problems and trouble-shooting of the server. If you are not sure about the cause of a failure and its removal method, please contact our customer service center for solution.

Notes: When replacing or installing hardware device for the server, you should disconnect the power cable from the server completely. It is recommended to use the anti-static wrist strap and to earth-connect the other end to provide electrostatic protection in dismounting the server.

7.1 Restarting Server

When a failure occurs, please try to restart the machine according to the following methods first.

Purpose	How to operate
Restart the software, clear up system memory and restart the operating system.	<Ctrl+Alt+Del>
Clear up system memory, self-check the POST again and restart the operating system.	Reset button
Cold boot again, switch off and restart the system power so that to clear up the system memory, to self-check the POST again, to restart the operating system and to power up all peripherals again.	Power button

7.2 Problems When Starting the Machine

Some problems often occur when the machine is started, generally due to incorrect hardware installation and configuration. You may find and solve the problems by the following methods.

7.2.1 System Can Not Be Powered on

After pressing the power button, the power light is not on and the system stays in non-electric state. Please try the following steps:

1. Check whether your power socket can supply power normally and the power cable is correctly connected.

2. Repeatedly press the power button to start the machine (pay attention not to exerting too much force).

3. Disconnect the power cable from the system and open the chassis to check.

4. Check the fastness of the cable connection and accessory plugging in the chassis.

5. Remove other external components other than Inspur's.

6. Pack the chassis, connect the power cable correctly and start the machine.

7.2.2 Monitor Has No Display

The server can be powered on (the host can start and run normally), but the monitor doesn't work:

1. Check the correctness and fastness of the signal cable and power cable connected to the monitor.

2. Make sure to power on the display.

3. Adjust the contrast and brightness of the monitor to confirm whether it can display or not.

4. Shut down the system and disconnect the power cable to check whether there is curve in the pin at the connecting end of the monitor signal cable and the host.

5. Find another monitor for test if possible.

6. If the machine is installed with components other than Inspur ones, please remove them first.

7. With the permission of Inspur technical support personnel, you may pull and plug RAM and clear CMOS for test.

7.2.3 Installation System Can't Find Hard Disk

1. When installing the system directly booted with the system CD, if it prompts that no hard disk can be found, please check the normality of the disk state and power-on self-check hard disk state.

2. If the power-on self check can detect the hard disk but the hard disk can't be detected when installing the system, it may be caused by the following conditions:

● If you are using the system CD to boot and install the operating system directly, the hard disk drive is generally added through the floppy driver or **Inspur driver U disk**. When using USB floppy driver to add the drive, please set the BIOS first and close the onboard floppy driver controller. When using **Inspur driver U disk** to add the drive, please connect **Inspur driver U disk** when starting the server.

● Please check whether the driver having been made is correct or not (the drive for external RAID card should be made directly from the attached RAID card driver

CD) and whether there is fault in the floppy disk or **Inspur driver U disk**.

7.2.4 Instruction of Onboard SATA Controller

If it is configured onboard SATA HostRAID, it only supports windows system of above Windows XP versions and connects 6 SATA devices at most.

7.2.5 Keyboard and Mouse Do Not Work

1. Check whether the cable joint of the mouse and keyboard is plugged and connected correctly. Make sure the joint pin has no curve.

2. Check whether the mouse setting in the control panel of the operating system is correct or not.

3. Clean the scrolling and drive shaft of the mouse.

4. It is suggested that you use the keyboard and mouse tested for compatibility by Inspur group or replace with other keyboard and mouse for testing.

7.2.6 System Blue Screen, Halt or Restart

For blue screen, restart or halt of the machine in the utilization of the system, you may refer to the following measures:

1. If other external non-Inspur components or some application program software are installed before the fault, it is suggested removing it and going on to test your server.

2. Use the latest antivirus software for antivirus test.

3. It is suggested that you record the displayed information code for blue screen, such as: stop c000000218.....; stop: 0x0000007b. This kind of information reveals problems in the system. It is suggested that you reinstall it. For the installation process, you can refer to the user manual.

4. If all above operations failed to solve the problem, it is suggested that you backup the file winnt/minidump in disk C, and call the service center for support from professional technical engineers who may ask you to provide minidump file for further analysis on the cause for blue screen and halt. If there is no minidump folder in disk C, please refer to the following steps: right-click on My Computer, select <Property>→<advanced>→<startup and recovery>, then select <settings>, change <write debugging information> in the next page to “small RAM dump” and restart the machine. The system will produce minidump file automatically in the next blue screen.

7.3 Machine Alarm

If there’s machine alarm in startup or utilization process, please refer to the fol-

lowing measures:

1. If this happens after you plugged in some external board, you may need to pull off this device and to do another test. If the alarm goes off, it shows that your external board is incompatible with the machine. It is suggested not to use it any more; if the alarm is still on, please go on referring to the following steps.

2. Locate the alarm sound:

● When the alarm sound is from the front of the chassis, usually we notice abnormal changes of the fault indicating light. There is the possibility of abnormal fans or hard disk module;

● If the alarm sound is from the rear of the chassis, please check whether a redundant power supply is configured or not and whether there is an abnormal status light of the power supply module or a module without power cable (when power alarm goes on, the shield switch can be pressed to stop it);

● If the alarm sound is in the chassis, the alarm may be from motherboard, RAID card or hard disk back plane. If it is also accompanied by no display on the monitor or power on faults, there is high possibility of something wrong with motherboard. You can try to pull or plug RAM or clear CMOS; if the starting self-check is normal and the alarm starts when the RAID card is under test, and there is abnormal array information, then it is likely that the RAID card has set off the alarm. There may be array abnormality; when the hard disk back plane alarms, there is always abnormal status light of the hard disk on the front panel, which can be used to help analysis.

3. After having collected the basic information, please feedback the detailed alarm information to Inspur technical support personnel in a timely manner. We will make further analysis and judgment and help you solve the problem as soon as possible.

7.4 Additional Notes

1. In order to guarantee the reliability of the system, it is suggested that you use the component of the relevant Model tested and authenticated by us when expanding and equipping components.

2. Please guarantee the fine electricity utilization environment of the server, normal voltage input and earth-connecting condition and temperature and humidity and so on within the normal range.

3. For special needs, when transferring the server, pay attention to avoiding the vibration and carry out in power off condition..

4. The out of order problem introduction in Windows Server 2008 system

The phenomenon that the system disk /RAID volume is inconsistent with the physical disk /RAID volume will appear when this product is in the AHCI mode (with more than one disks) or HostRAID mode (with more than one RAID volume) of SATA configuration when installing Windows Server 2008 operating system. This phenomenon is the Bug of Windows Server 2008 operating system.

In the AHCI mode, if you want to install the operating system on the first physical disk, when installing the operating system, you can insert the first disk and pull out other disks. You can insert other disks after the installation is completed. Or enter BIOS→SATA Configuration →SATA Port item and set SATA Port3/ Port4/ Port5 item to [Disabled]. At this time, the system will be installed to the first physical disk. After the completion of operating system installation, set SATA Port3/Port4/ Port5 item to [Enabled].

In the HostRAID mode, please record the name of the RAID volume when you are doing the RAID setting. When installing the operating system, please distinguish the name of RAID volume so that the operating system can be installed in specified place.

5. Explanation that the disk array capacity under SATA HostRAID mode is not the maximum capacity.

This product integrates SATA HostRAID. During the creation of RAID volume, the system will automatically analyze the size of the physical disk and will automatically adjust the size of the RAID volume to 97% of the minimum physical disk volume. Because of the different suppliers, physical disk capacity may vary.

6. For more notices of our products, please refer to the FAQ for server in the official website of Inspur:

http://www.inspur.com/support/Channel_Home/support_sv.asp

Chapter Eight Instruction of Integrated Management Card Management Function

This product integrates IPMI management card, by which the user can remote log in the server. The following will describe the application of management function that management controller integrates.

8.1 Management Chip BMC IP

Onboard IPMI management card IP can be checked and set in the menu of "Server Mgmt"→"BMC network configuration" →"Lan channel 1/2" →"Station IP address" in the BIOS.

Notes:

Lan channel 1: refers to the multiplex management network interface, Intel 82574 network card 1.

Lan channel 2: refers to IPMI management special interface.

Please set or view IP address according to the actual use of the network card.

If you reset IP address of IPMI card, only after saving and restarting the server or powering off (disconnecting the power) can you make it into normal use.

8.2 Remote Login

1. Remote Client System Requirements

The requirements of remote client system of GUI interface connecting to the server management chip through web browser are shown in the following table:

Requirements	Remote web control panel/client
Operation system	Support the operation system of Microsoft Internet Explorer browser
Browser plug-in module	Install Java SE Runtime Environment 6, Update 12 or higher version
TCP/IP network protocol stack	Support TCP/IP network protocol stack

The download address of browser plug-in module:

Java SE Runtime Environment:http://www.java.com/en/download/

You can use Inspur driver CD to get and install browser plug-in module: enter

the java directory in the CD root directory (here is the Java SE Runtime Environment 6, Update 18 plug-in module based on Windows system) and directly install browser plug-in module.

Please install the browser plug-in module on the user end before log into the remote desktop.

2. Remote Login Method

Input IP address of BMC in the IP address bar of client browser, and then click [Enter]. The management log-in interface will appear, just as shown in the following picture.

Please input default Username and Password:

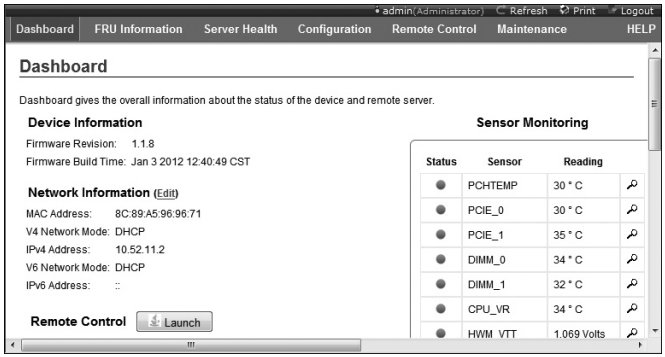
Username:admin

Password:admin

Notice: default Username and Password can conduct all module configurations and setting of permission. So for security reasons, it is recommended changing login password in time when you login.

8.3 Function Menu Introduction

The default display interface after logging in is as follows.



The following function menus can be found on the top of the interface: Dashboard, FRU Information, Server Health, Configuration, Remote Control and Maintenance.

1. Dashboard menu

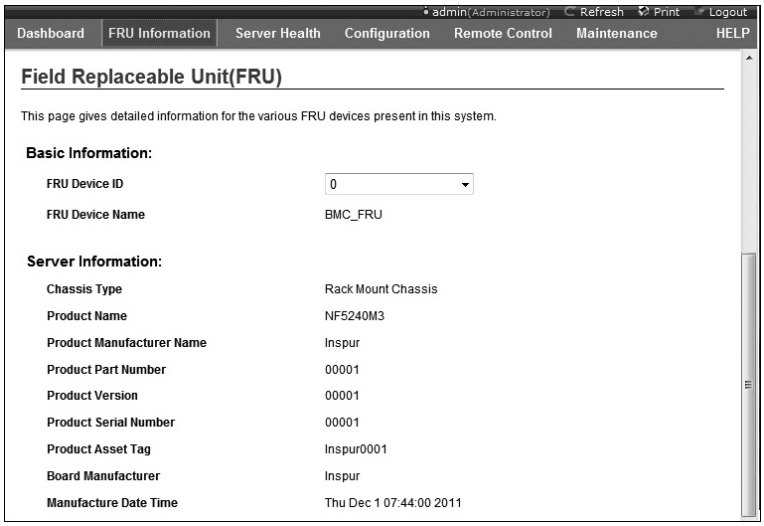
In this menu, the information of management chip Firmware version, modification time and MAC address, etc. can be viewed.

Click [Edit] button behind Network Information to enter network settings interface. And set IP address and gateway as well as other information.

Click [Launch] behind Remote Control to log in console. When using, if prompted to install Jviewer browser, please install according to the prompt.

2. FRU Information menu

This menu displays FRU Information, including Basic Information and Server Information two parts. Basic Information shows ID number and names of FRU device. Server Information displays server whole machine's type, name, manufacturer and other information. Following are the detailed information:



3. Server Health menu

In this menu, data information relating to server health including [Sensor Readings], [Event Log] and [System and Audit Log] can be checked.

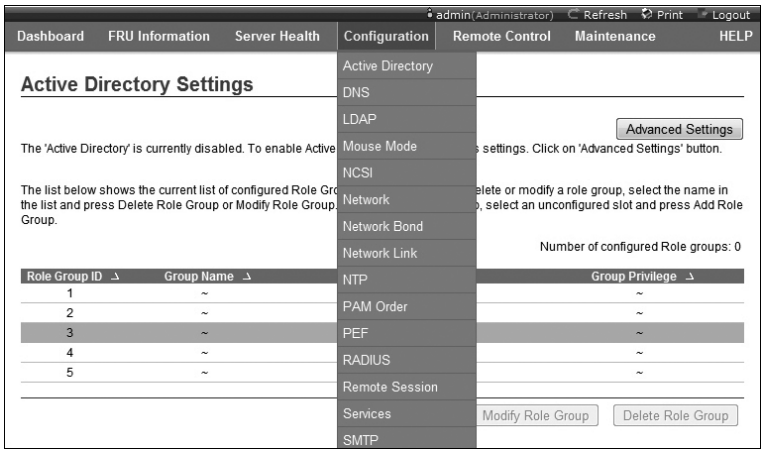
① Sensor Readings menu: shows all Sensor values, which are mainly temperature, voltage and fan speed. It can refresh and display according to category.

② Event Log menu: displays sensor events, BIOS events, system management

software events, OEM events and remote console software event logs. It can display according to category or display uniformly. The user can view logs anytime and also can clear logs.

③ System and Audit Log menu: displays system log and check Log. System log needs displaying according to category.

4. Configuration menu



Configuration menu is shown in picture above. The following will introduce the commonly used menus.

① Mouse Mode menu: set mouse mode.

Set Mode to Absolute (Recommended when server OS is Windows): the absolute mode mouse can switch freely between remote picture and local picture.

Set Mode to Relative (Recommended when server OS is Linux): the relative mode mouse can switch between remote picture and local picture by selecting <Alt>+<M>.

② Network menu: set network. Please change IP address or select DHCP according to needs.

③ NTP menu: set date and time to be synchronous with time server or set at will. If the remote management needs to choose time server to be synchronization, please input address of time synchronization server.

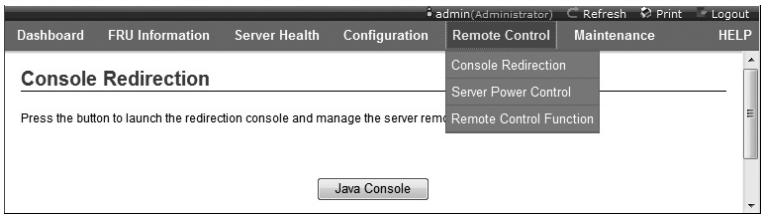
④ Remote Session menu: set KVM or data to be encrypted or not during the next redirection as well as the loading method of virtual media.

⑤ SMTP menu: set SMTP server's IP address as well as user name and password.

⑥ User menu: set user. And be able to add, edit and remove users.

The username should start with English letters and have a character size within 4~32 and a password of at least 8 characters size.

5. Remote Control Menu

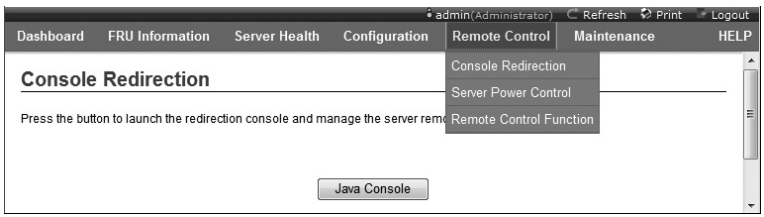


This function menu allows you to perform various remote operations on the server, including operating remote console, system switch and other control operations.

① Console Redirection menu: log in console.

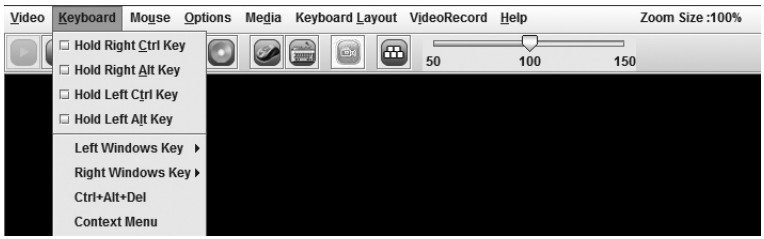
After choosing this menu, and click <Java Console> button, the system will log in remote desktop. When using, if prompted to install Jviewer browser, please install according to the prompt.

A. Remote desktop: Video menu



Menu	Function
Pause Redirection	Pause remote desktop display
Resume Redirection	Resume remote desktop display
Refresh Video	Refresh remote desktop display
Compression Mode	Compression mode setting
Dct Quantization Table	Remote desktop display quantization setting
Full Screen	Full screen display of remote desktop
Exit	Exit remote desktop

B. Remote desktop: Keyboard menu



Menu	Function
Hold Right Ctrl Key	Select this option, equal to click the "Ctrl" key on the right side of the keyboard when operating.
Hold Right Alt Key	Select this option, equal to click the "Alt" key on the right side of the keyboard when operating.
Hold Left Ctrl Key	Select this option, equal to click the "Ctrl" key on the left side of the keyboard when operating.
Hold Left Alt Key	Select this option, equal to click the "Alt" key on the left side of the keyboard when operating.
Left Windows Key	Selecting this option will appear "Hold down" and "Press and Release". It stands for press down or release Windows key on the left side of the keyboard
Right Windows Key	Selecting this option will appear "Hold down" and "Press and Release". It stands for press down or release Windows key on the right side of the keyboard.
Ctrl+Alt+Del	Select this option, equal to press "Alt+Ctrl+Del".
Context Menu	Shortcut menu

Notes: when configuring RAID through remote console, it requires the following three ways to enter the RAID configuration interface (take combination keys Ctrl + H for example):

① Check Hold Left Ctrl Key option in remote desktop Keyboard menu, and then click key H on the Keyboard;

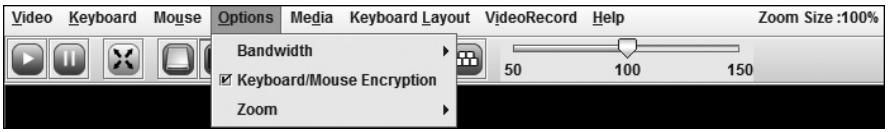
② Select key LCTRL at the lower right corner of remote desktop, and then click key H on the keyboard;

③ Through SoftKeyboard in remote desktop Keyboard Layout menu, click "CTRL + H" on the soft keyboard.

C. Remote desktop: Mouse menu

Menu	Function
Show Cursor	Select this option to display local mouse and redirection mouse on remote desktop at the same time.

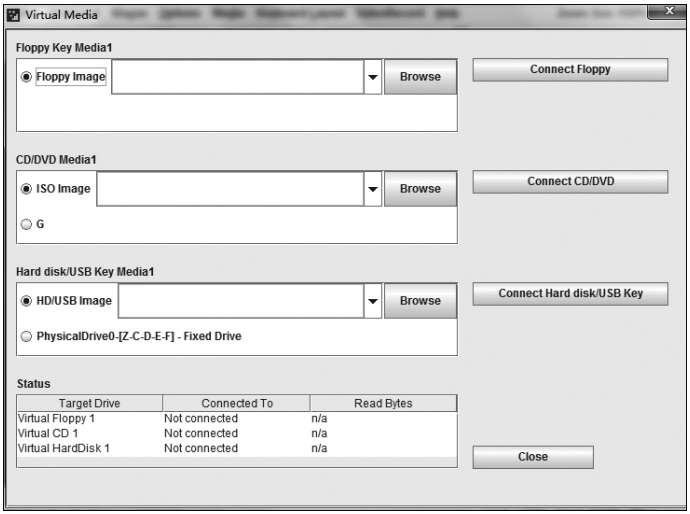
D. Remote desktop: Options menu



Menu	Function
Bandwidth	Select this item to set displayed bandwidth
Keyboard/Mouse Encryption	Encryption configuration for keyboard and mouse
Zoom	Select this item to magnify or minify the window of remote desktop, [Zoom In] for magnifying and [Zoom out] for minifying.

E. Remote desktop: Media menu

Click <Media> menu. It will appear [Virtual Media Wizard] window. In this window, the user can load client-side floppy disk image, CD image and CD drive, as is shown in figure below:



Select image type to load. If to load floppy disk image, please select <Floppy Image>. And if to load CD image, please select <ISO Image>, then click <Browse> to select image location, and click the corresponding <Connect> to complete loading image.

If it is bootable CD or system installation disk in optical drive of synchronous cli-

ent, set client CD drive as the first startup sequence in server BIOS settings. Installation of ISO file is the same with remote CDROM installation, which needs to set startup sequence in server BIOS.

F. Remote desktop: Keyboard Layout menu

Menu	Function
Auto Detect	Select this option and it will automatically detect the keyboard type.
SoftKeyboard	Use soft keyboard. There are keyboard types of many kinds of languages for choice.

G. Remote desktop: VideoRecord menu

Select <VideoRecord> menu to set options related with video record.

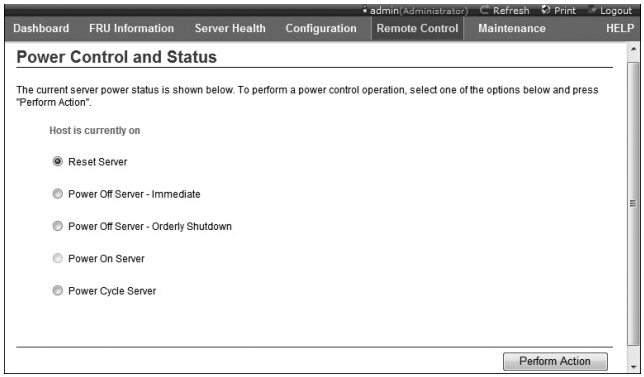
Menu	Function
Start Record	Select this option and start video record.
Stop Record	Select this option and stop video record.
Settings	This option is used to set video record duration and storage directory. Only after the directory is set can the video record begin.

H. Remote desktop: Help menu

Click [Help] menu. A drop-down menu <About JViewer> appears. Select this option, and redirection browser version will display.

② Server Power Control Menu

Select Server Power Control menu and enter the interface shown in the following figure:



Server Power Control menu: displays the current power state of server, providing reset server, power off server immediately, power off server orderly, power on server and power cycle server. After selecting the option to execute, click <Perform Action> to execute.

③ Remote Control Function menu

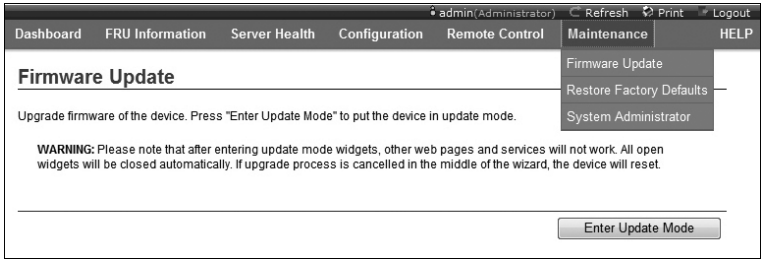
admin(Administrator) Refresh Print Logout
Dashboard FRU Information Server Health Configuration Remote Control Maintenance HELP
Remote Control Function List
The current support function is shown below. To perform a control operation, select one of the options below and press " Perform Action ".
Light on UID
Light off UID
Perform Action

Select Server Power Control menu and enter the interface shown in the following figure:

Select <Light on UID> option and click <Perform Action> to execute. After that, ID light of front and back panel of corresponding server will be on.

Select <Light off UID> option and click <Perform Action> to execute. After that, ID light of front and back panel of corresponding server will be off.

6. Maintenance menu


admin(Administrator) Refresh Print Logout
Dashboard FRU Information Server Health Configuration Remote Control Maintenance HELP
Firmware Update
Restore Factory Defaults
System Administrator
Firmware Update
Upgrade firmware of the device. Press "Enter Update Mode" to put the device in update mode.
WARNING: Please note that after entering update mode widgets, other web pages and services will not work. All open widgets will be closed automatically. If upgrade process is cancelled in the middle of the wizard, the device will reset.
Enter Update Mode

This function menu can realize remote update of BMC firmware and restart of IPMI card.

① Firmware Update menu

This menu can realize remote update of IPMI management card Firmware. We recommend users not updating it by themselves. If it really needs to be updated, the update file must have been approved by us.

② Restore Factory Defaults

This menu is used to load factory default values of IPMI management card.

③ System Administrator

This menu is used to change system administrator's rights and password.

Chapter Nine Server Installation Guide

The server can be converted to rack-mounted server. If your server is rack-mounted configuration, please refer to this chapter.

The Guide will help you to understand how to install Inspur Yingxin NP5540M3 server in Inspur server cabinet or compatible standard industrial cabinet.

9.1 Cabinet Preparation

Angle rail adjustment: in order to guarantee the server can be installed in the cabinet normally, the clearance between the front and rear part of the angle rail should be adjusted to be at least larger than 650mm; inner width between left angle rail and right angle rail should be larger that 480mm, the space between cabinet door and front angle rail larger than 60mm.

Leveling cabinet: the cabinet must be installed in a stable place. Adjust the four support feet at the bottom of the cabinet to make the cabinet stable on the ground. Meanwhile, dismount the cabinet door for convenience of guide rail installation.

Cabinet grounding: to avoid electric shock, a grounding device must be installed in the cabinet. If the server power line is installed in the power socket, which constitutes a portion of the cabinet, grounding should be properly provided for the cabinet. If the server power line is inserted into the power socket in the wall, the grounding device in the power socket just provides grounding for the server, and then proper grounding protection for cabinet and other internal devices should be provided. We recommend you to use the cabinet specially designed by Inspur for the server. If so, the internal of the cabinet should be already grounded. Please don't change the ground joint in the cabinet unless it is of absolute necessity.

Temperature: if installed in the cabinet, the operation and working temperature of the server can't be lower than 5℃ and higher than 35℃ .

Ventilation: the cabinet used by server cluster must provide enough wind current for the front of the server to ventilate, and must ensure 4100Btu heat discharge per hour. The cabinet selected by the cluster and ventilation condition must correspond with requirements of the server.

Front and back angle rail spacing: before the rails installation, please adjust the

space between cabinet front and back angle rail (mobile rail) according to the depth of the server.

9.2 Install Server Chassis Handles

1. Take chassis handles and fixed screws out of the package, and install handles on both sides of chassis.

Figure 1

2. Each chassis handle is fixed with six countersunk screws.

Figure 2

3. Chassis handle installation is complete.

Figure 3

9.3 Server Slide Rail Suite

Take slide rail suite out of package. Slide rail suite attached with server NP5540M3 contains the following items:

1. Outer rail 2
2. Middddle rail 2
3. Inner rail 2
4. Long adjustment sheet 4 sheets
5. Short adjustment sheet 4 sheets
6. Metric screw 1 package
7. British screw 1 package

● Long adjustment sheet and short adjustment sheet are shown in the following Figure 4.

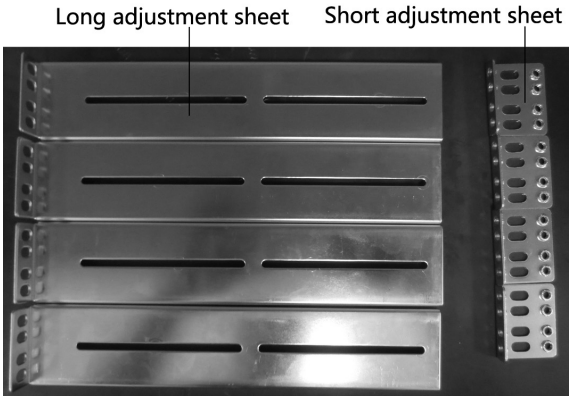


Figure 4

Long adjustment sheet is installed in outer rail, used to adjust the length of the outer rail.

Short adjustment sheet is installed in the inner side of cabinet angle rail, used to fix outer rail into cabinet angle rail.

● Metric screw package contains 18 round head M5*8 screws, 18 round head M4*6 screws, 10 flat washers and many other screws. The following Figure 5 shows the commonly used round head M5*8 screw, round head M4*6 screw and flat washer.

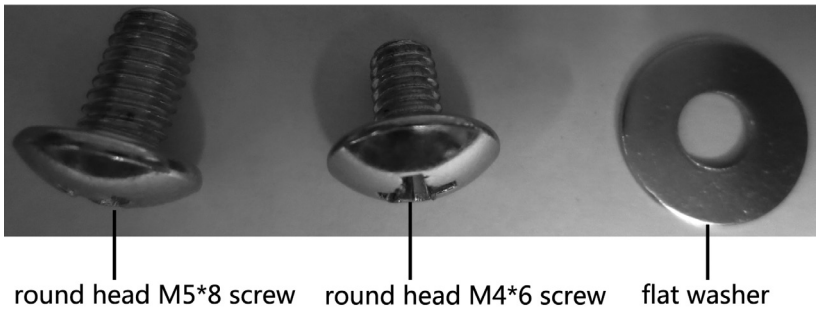


Figure 5

● Inner rail, middle rail and outer rail have been installed together as is shown in Figure 6.

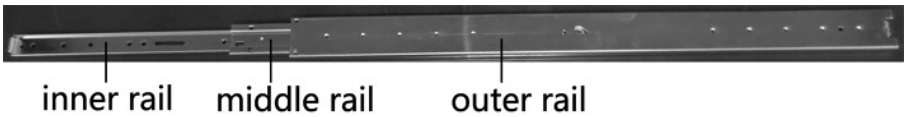


Figure 6

9.4 Install Inner Rail

1. Firstly, take inner rail out of slide rail: hold the front end of the whole slide rail with left hand, then pull inner rail outward, when it can no be pulled again, push bayonet lock with finger toward the direction of arrow shown in Figure 7 and then completely pull inner rail out with uniform force.

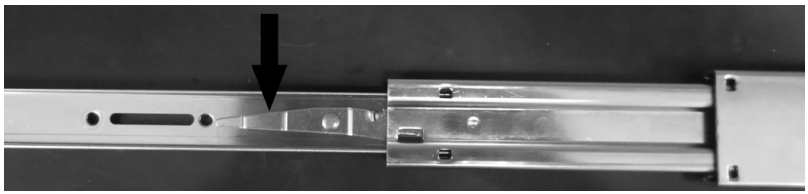


Figure 7

2. The screw holes location on chassis side that need to be corresponding to inner rail are shown in Figure 8.

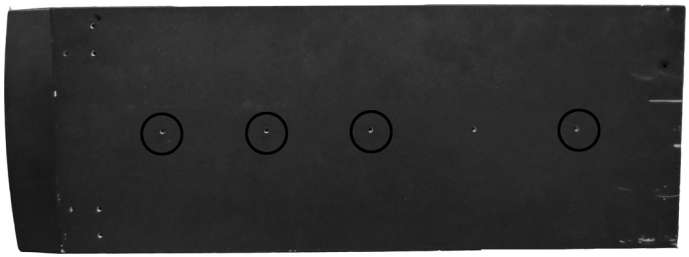


Figure 8

3. Make smooth face of inner rail corresponding with the side of chassis and the holes location in inner rail corresponding with the screw holes on chassis. And also make inner rail stay close to the chassis. And then completely fix the inner rail into chassis through 4 round head M4*6 screws based on the location shown in Figure 9.

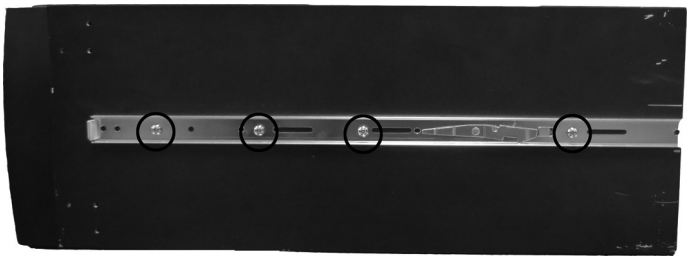


Figure 9

Repeat the above steps to install the other inner rail into the corresponding place on other side of the chassis.

9.5 Install Outer Rail to Cabinet

1. Install the long adjustment sheet to the both sides of the outer rail and make the groove of the long adjustment sheet face to the smooth surface of the out rail. Please

according to the depth of the cabinet; adjust the long adjustment sheet on both sides of the outer rail properly, and then fix it using 4 round head M4*6 screws and flat washers (used below the screw). The fixing hole position is shown in figure 10. Figure 10 is just for reference, the actual fixing hole position will be determined according to the depth of the cabinet.

Figure 10

2. Confirm the installation position of the server on the cabinet.

3. Collocate short adjustment sheet (located in the inner side of the cabinet angle hole position, one for front, the other for the rear) and fix the front and rear ends of the outer rail to the cabinet angle rail hole position using 4 round head M5*8 screws, two screws for both front and rear ends. **Please make sure the front and rear part of the outer rail horizontal, as shown in figure 11.**

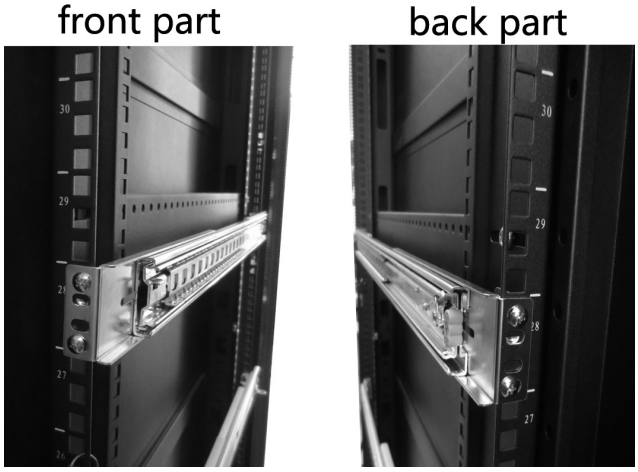


Figure 11

4. Repeat the above operations, install the long adjustment sheet to the front and rear ends of another outer rail and install the outer rail with long adjustment sheet to the cabinet.

9.6 Install Server to Cabinet

1. Pull the middle rail of the outer rail out fully, then lift the server close to the cabinet and make the rear of the server face the front of the cabinet.

2. Stick the inner rails on both sides of the server on the middle rail groove on the cabinet outer rails.

3. Keep the server horizontal and push it stably into the cabinet. During the push, if the serve is stuck, please push the bayonet lock between the inner rail and middle rail in both sides of the server upward or downward (the directions are opposite on either side), meanwhile, push the server into the cabinet, as shown in figure 12.

Figure 12